

## **Arlington Conservation Commission**

**Date:** Thursday, February 18, 2021

**Time:** 7:30 PM

Location: Conducted by Remote Participation

Please note: The listing of matters are those reasonably anticipated which may be discussed at the meeting. Not all items listed may in fact be discussed and other items not listed may be brought up for discussion to the extent permitted by law.

#### **Agenda**

#### Administrative

a. In accordance with the Governor's Order Suspending Certain Provisions of the Open Meeting Law, G. L. c. 30A, § 20 relating to the COVID-19 emergency, the February 18, 2021 public meeting of the Arlington Conservation Commission shall be physically closed to the public to avoid group congregation. The meeting shall instead be held virtually using Zoom.

Topic: Conservation Commission Meeting

Time: February 18, 2021 07:30 PM Eastern Time (US and Canada)

#### Register in advance for this meeting:

https://town-arlington-ma-us.zoom.us/meeting/register/tJAtfugrrDooGNTfSvA3KnlB1B5lj x5gOw1

Members of the public are strongly encouraged to send written comment regarding any of the hearings listed below to Conservation Agent Emily Sullivan at esullivan@town.arlington.ma.us.

Please read Governor Baker's Executive Order Suspending Certain Provision of Open Meeting Law for more information regarding virtual public hearings and meetings: https://www.mass.gov/doc/open-meeting-law-order-march-12- 2020/download

- b. Review draft 02/04/2021 minutes.
- c. Update on Thorndike Place ZBA 02/16/2021 hearing.

#### 2. Discussion

a. Regulations Update: Full Draft

#### Hearings

#### **Request for Determination of Applicability**

Request for Determination of Applicability: 25 Henry Street

Arlington File #A21.2

7:45pm

The project proposes to construct a driveway and stormwater management system partially within the Riverfront Area of Reed's Brook. This project is part of a larger project to construct a single-family home on the lot, which is currently undeveloped. The proposed single-family home is outside of conservation jurisdiction.

### Request for Certificate of Compliance

Request for Certification of Compliance: Arlington Reservoir Phase 1 MassDEP File #091-0304

8:15pm

The project as completed included the renovation of the bathing beach pump house and filtration system within the 100-ft Wetlands Buffer, Adjacent Upland Resource Area, Bordering Land Subject to Flooding, Land Under Water, and Bank of the Arlington Reservoir.



## Town of Arlington, Massachusetts

### Review draft 02/04/2021 minutes

Summary:

Review draft 02/04/2021 minutes.

ATTACHMENTS:

Type File Name Description

Parameter Reference Material 02042021\_Minutes\_Conservation\_Commission.pdf Draft 02/04/2021 Minutes



#### **Arlington Conservation Commission**

Date: February 4, 2021

Time: 7:30pm

Location: Conducted through Remote Participation using Zoom

#### Minutes

Attendance: Commission Members Susan Chapnick (Chair), Mike Gildesgame, Pam Heidell, Dave Kaplan, Nathaniel Stevens, Chuck Tirone (Vice Chair), and David White; Associate Commissioner Cathy Garnett; and Conservation Agent Emily Sullivan. Associate Commissioner Doug Kilgour was not present. Members of the public included Stephanie Kiefer, Esq. and Tim O'Leary.

#### 01/21/2021 Meeting Minutes

The Commission discussed edits to the draft 01/21/2021 minutes. D. White motioned to approve the minutes as edited, N. Stevens seconded, all were in favor, motion approved. A roll call vote was taken. S Chapnick voted yes, M. Gildesgame voted yes, P. Heidell voted yes, D. Kaplan voted yes, N. Stevens voted yes, C. Tirone voted yes, and D. White voted yes.

#### **Water Bodies Working Group Update**

The Commission reviewed the Working Group's draft annual report and budget.

D. White motioned to approve the Water Bodies budget, N. Stevens seconded, all were in favor, motion approved. A roll call vote was taken. S Chapnick voted yes, M. Gildesgame voted yes, P. Heidell voted yes, D. Kaplan voted yes, N. Stevens voted yes, C. Tirone voted yes, and D. White voted yes.

#### **Discussion: Draft Thorndike Place Conditions**

S. Chapnick updated the Commission on the status of the Thorndike Place Comprehensive 40B Permit. The Zoning Board of Appeals (ZBA) is beginning to draft conditions for the comprehensive permit application, and has asked Town departments and boards to submit draft conditions.

The Commission reviewed a draft set of conditions submitted to the ZBA on 02/01/2021. The Commission discussed revisions to the draft conditions. N. Stevens motioned to approve the draft conditions as edited, P. Heidell seconded, all were in favor, motion approved. A roll call vote was taken. S Chapnick voted yes, M. Gildesgame voted yes, P. Heidell voted yes, D. Kaplan voted yes, N. Stevens voted yes, C. Tirone voted yes, and D. White voted yes.

Regulatory Update: Full Draft
The Commission reviewed and discussed a full draft of the updated regulations.

 $\mbox{M.}$  Gildesgame motioned to close the Commission meeting,  $\mbox{D.}$  White seconded, all were in favor, motioned approved.

Meeting adjourned at 10:05pm.



## Town of Arlington, Massachusetts

## **Regulations Update**

Summary:

Regulations Update:

Full Draft

ATTACHMENTS:

Type File Name Description

Reference Material Arlington\_Wetland\_Regs\_Draft\_\_02182021.pdf Draft Regulations 02/18/2021

#### **REGULATIONS – WETLANDS PROTECTION**

Section 1 - Introduction and Purpose	2
Section 2 - Jurisdiction	2
Section 3 - Burden of Going Forward and Burden of Proof	3
Section 4 - Definitions	3
Section 5 - Time Periods	10
Section 6 - Actions by Conservation Commission	11
Section 7 - Working Sessions	11
Section 8 – Administrative Review of Minor Projects or Work	12
Section 9 - Determination of Applicability	13
Section 10 – Emergency Certification	
Section 11 – Notice of Intent/Application for Permit	15
Section 12 - Filing Fees & Consultant Fees	
Section 13 - Plan Requirements	19
Section 14 - Area to be Staked Prior to Site Inspection	21
Section 15 - Public Hearings	21
Section 16 - Issuance of Permit	22
Section 17 - Extension of Permit	23
Section 18 – Minor Amendment of Permit	24
Section 19 - Certificate of Compliance	25
Section 20 – Prohibited Materials	26
Section 21 - Banks	26
Section 22 - Vegetated Wetlands (Wet Meadows, Marshes, Swamps, and Bogs)	27
Section 23 - Land Under Water Bodies (Under Any Stream, Pond or Lake)	31
Section 24 - Land Subject to Flooding (Bordering and Isolated)	
Section 25 - Vegetation Removal and Replacement	36
Section 26 – Adjacent Upland Resource Area	
Section 27 – Vernal Pool and Its Associated 100-Foot Adjacent Upland Resource Area	44
Section 28 – Riverfront Area	
Section 29 - Variances	46
Section 30 - Areas of Critical Environmental Concern	47
Section 31 – Wildlife Habitat	
Section 32 – Climate Change Resilience	
Section 33 - Stormwater Management	49
Section 34 - Ecological Restoration Projects	50
Section 35 - Severability; Compliance With Court Decisions	
Section 36 - Effective Date	50

## **Section 1 - Introduction and Purpose**

A. Introduction. These regulations are promulgated by the Town of Arlington Conservation Commission (the "Conservation Commission" or "Commission") pursuant to the authority granted to it under the Town of Arlington Wetlands Protection Bylaw (hereinafter referred to as the "Bylaw"). These regulations complement and implement the Bylaw and shall have the force of law upon their effective date. These regulations set forth additional definitions, regulations,

#### **Arlington Regulations for Wetlands Protection**

Draft - February 18, 2021

requirements, and performance standards necessary to protect the values and/or intent of the Bylaw; and protect additional Resource Areas and wetland values as well as specify standards and procedures stricter than those of the Massachusetts Department of Environmental Protection's Wetlands Protection Act, G.L. c. 131, § 40 and implementing regulations at 310 CMR 10.00. Only those exemptions explicitly stated in the Act and state wetland regulations at 310 CMR 10.00 apply except for those exemptions listed in 310 CMR 10.04 and 10.05. Other than stated in the Bylaw or these Regulations, the exceptions provided in the Wetlands Protection Act and regulations (310 CMR 10.00) shall not apply. In addition to the Exemptions stated in the Bylaw, the Commission's jurisdiction under the Bylaw and these regulations shall not extend to the uses and structures of agriculture that enjoy the rights and privileges of laws and regulations of the Commonwealth governing agriculture, including work performed for normal maintenance or improvement of land in agricultural or aquacultural uses as defined in the Wetlands Protection Regulations, 310 CMR 10.00.

The portion of these regulations concerning consultants and consultant fees are also promulgated pursuant to the authority granted the Commission under G.L. c. 44, § 53G.

B. Purpose. The Bylaw sets forth a public review and decision making process by which activities affecting areas subject to protection under the Bylaw are to be regulated in order to ensure the protection of the following interests: public or private water supply, ground water supply, flood control, erosion control and sedimentation control, storm damage prevention, other water damage prevention, prevention of pollution, protection of surrounding land and other homes or buildings, wildlife protection, plant or wildlife habitat, aquatic species and their habitats, and the natural character or recreational values of the wetland resources (collectively, "Resource Area Values" or "Interests of the Bylaw"). The purposes of these regulations are to define and clarify that process by establishing standard definitions and uniform procedures by which the Arlington Conservation Commission shall carry out its responsibilities under the Bylaw.

#### **Section 2 - Jurisdiction**

- A. Areas subject to protection under the Bylaw and these regulations:
  - (1) Any marsh, freshwater wetland, vernal pool, wet meadow, bog, swamp.
  - (2) Any river, stream, creek, pond, reservoir, or lake.
  - (3) Any bank of the areas set forth in A(1) or A(2) above.
  - (4) Any land under the areas set forth in A(2) above said waters.
  - (5) Any land within 100 feet of the areas set forth in A(1) or A(2) or A(3) above.
  - (6) Any riverfront area as hereinafter defined.
  - (7) Any land subject to flooding.
- B. Activities subject to regulation under the Bylaw and the provisions of these regulations:
  - (1) Any activity proposed or undertaken which constitutes removing, filling, dredging, discharging into, building upon, degrading or otherwise altering any area specified in Subsection A of this Section is subject to regulation under the Bylaw and requires the filing of an application for permit.

**Comment [ES1]:** NS: did we not want to exempt some of the RFA or Buffer Zone exemptions? Better to list the exemptions below in 2(B)].

Comment [ES2]: NS: decide if we want to exclude work for maintaining, repairing or replacing, etc. public service/utility facilities and structures; the MACC model bylaw does partly – no NOI is required, but it says "provided that written notice has been given to the Conservation Commission prior to commencement of work, and provided that the work conforms to any performance standards and design specifications in these regulations..." Comment: most utilities usually give us a courtesy of notice.

- (2) Any activity proposed or undertaken outside the areas specified in Subsection A above shall not be subject to regulation under the Bylaw unless, in the judgment of the Conservation Commission, said activity may result or has actually resulted in the removing, filling, dredging, discharging into, building upon, degrading or otherwise altering an area specified in Subsection A above. If anyone wishes to have the Conservation Commission determine whether an activity may be subject to regulation under the Bylaw, he or she shall submit a request for determination of applicability pursuant to Section 9 of these regulations.
- (3) For stormwater management systems constructed per Massachusetts Department of Environmental Protection's stormwater management policy (November 18, 1996) or standards (January 2, 2008) or 310 CMR 10.05(6)(k) through (q), any activity proposed or undertaken within said stormwater management systems that includes the removal of only the accumulated sediment from a basin, water quality swale or constructed stormwater wetland (including forebays or other forms of pretreatment) is not subject to these regulations.

## Section 3 - Burden of Going Forward and Burden of Proof

A. The applicant shall have the burden of going forward with credible evidence from a competent source in support of all matters asserted pursuant to Subsection B below by the applicant in accordance with his or her burden of proof.

B. The applicant shall have the burden of proving by a preponderance of the credible evidence from a competent source that the work in the application will not have a significant or cumulative effect upon the wetland values protected by the Bylaw. Failure to meet the burden of proof shall be cause for the Conservation Commission to deny the application for permit along with any work or activity proposed therein.

#### **Section 4 - Definitions**

A. Except as otherwise provided in the Bylaw or these regulations, the definitions of terms in the Bylaw shall be as set forth in the Wetlands Protection Act, M.G.L. c. 131, Section 40, and its regulations, 310 C.M.R. 10.00.

- B. As used in these regulations, the following terms shall have the meanings indicated:
  - ABUTTER the owner of any land within 100 feet of the property line of the land where
    the activity is proposed, as determined by the most recent assessors' records including
    any land located directly across a street, river, stream or pond that is within 100 feet of
    the project's limits of work.
  - 2) ACTIVITY on or in any area subject to protection by the Bylaw and its regulations: any form of draining, dumping, dredging, damming, discharging, excavating, filling or grading; the erection, reconstruction or expansion of any buildings or structures; the driving of pilings; the construction or improvement of roads and other ways; the changing of runoff characteristics; the intercepting or diverging of groundwater or

- surface water; the installation of drainage, sewage and water systems; the discharging of pollutants; the destruction of plant life; the cutting or removal of 20% or more of the growth or limbs of trees or vegetation; and any other changing of the physical characteristics of land or the physical or chemical characteristics of water; and alterations that impact the ability of the resource area to adapt to / be resilient to climate change impacts.
- 3) ADAPTATION –measures undertaken to protect resource areas from the impacts of climate change and to protect the ability of resource areas to mitigate the impacts of climate change through providing the interests protected by the Bylaw (the resource area values and functions).
- 4) ADJACENT UPLAND RESOURCE AREA or AURA the area 100 feet horizontally lateral from the boundary of any of the following Resource Areas: marsh, freshwater wetland, vernal pool, wet meadow, bog, swamp, bank, stream, creek, pond, reservoir, or lake, or resource area defined in Section 2.A(1) through (4).
- 5) ALTER to change the condition(s) of any area subject to protection by the Bylaw and shall include but not be limited to one or more of the following actions upon the resource areas protected by this Bylaw:
  - a. fill, removal, excavation or dredging of soil, sand, gravel or aggregate material of any kind;
  - b. changing of preexisting drainage characteristics, flushing characteristics, salinity distribution, sedimentation patterns, flow patterns or flood storage retention areas;
  - c. draining, disturbing or lowering of the water level or water table;
  - d. the dumping, discharging or filling with any material which could degrade the water quality;
  - e. driving of pilings, erection of buildings or structures of any kind;
  - f. placing of any object or obstruction whether or not it interferes with the flow of water;
  - g. destruction, extensive trimming (defined as 20% or more of limbs or growth), or removal of plant life, vegetation, or trees;
  - h. changing of water temperature, biochemical oxygen demand, nutrient concentration or chemical concentration or other natural characteristics of the receiving water;
  - i. any activities, changes or work which pollutes any stream or body of water, whether located in or out of the Town of Arlington;
  - j. application of pesticides and herbicides;
  - k. any activity, change or work which adversely affects groundwater or drinking water supply;
  - 1. any activity, change or work which adversely impacts the ability of the resource area to be resilient to climate change impacts; or
  - m. any incremental activity that has or may have a cumulative adverse effect on the Resource Area Values protected by the Bylaw.
- 6) APPLICANT a person filing a Request for Determination of Applicability or Notice of Intent or other application with the Commission.
- 7) AREA OF CRITICAL ENVIRONMENTAL CONCERN an area so designated by the Secretary of Environmental Affairs of the Commonwealth of Massachusetts pursuant to regulations (301 C.M.R. 12.00), said designation being due to the particular

- environmental factors which impact upon the areas in question and which highlight the importance of each area so designated.
- 8) AREA SUBJECT TO PROTECTION UNDER THE BYLAW any area specified in Section 2(A). It is used synonymously with "resource area," each of which is defined in greater detail in these regulations.
- 9) BANK the portion of the land surface which normally abuts and confines a water body, often between the mean annual low flow level and the first observable break in the slope or the mean annual flood level, whichever is lower;
- 10) BEST AVAILABLE MEASURES the most up-to-date technology or the best designs, measures or engineering practices that have been developed and that are commercially or readily available.
- 11) BEST MANAGEMENT PRACTICES technologies, designs, measures or engineering practices that are in general use to protect the resource area values of the Bylaw including but not limited to those for climate change adaptation and resilience.
- 12) BORDERING any land within either of the following or the greater thereof:
  - a. 100 feet horizontally lateral from the edge of any marsh, freshwater wetland, vernal pool, wet meadow, bog, swamp, river, stream, creek, pond, reservoir, or lake: or
  - b. within the maximum lateral extent of the water elevation of the statistical 100 year frequency storm.
- 13) BOUNDARY the boundary of an area subject to protection under the Bylaw. A description of the boundary of each area is found in the appropriate section of these regulations or in the Bylaw.
- 14) BUFFER ZONE see definition for ADJACENT UPLAND RESOURCE AREA;
- 15) BYLAW Article 8 of Title V of the Bylaws of the Town of Arlington, Massachusetts, entitled "Wetlands Protection".
- 16) BYLAW INTERESTS are defined in Section 1, above; also known as Resource Area Values
- 17) CALIPER diameter of a tree trunk (in inches) measured six inches above the ground for trees up to and including four-inch diameter, and 12 inches above the ground for larger trees.
- 18) CERTIFICATE OF COMPLIANCE a written determination by the Conservation Commission as to whether work or a portion thereof has been completed in accordance with the permit issued under the Bylaw governing said work.
- 19) CLIMATE CHANGE a change in the state of the earth's climate that can be identified by statistical changes of its properties that persist for an extended period, typically decades or longer, whether due to natural variability or as a result of human activity. Climate change impacts can adversely impact resource area functions.
- 20) COMPENSATORY FLOOD STORAGE a volume not previously used for flood storage, shall have an unrestricted hydraulic connection to the same waterway or water body, and, with respect to waterways, shall be provided within the same reach of the river, stream, or creek. Compensatory flood storage shall be replaced at each elevation where flood storage is lost.
- 21) CONDITIONS those requirements set forth in a written permit issued by the Conservation Commission for the purpose of permitting, regulating or prohibiting any

- activity that removes, fills, dredges or alters an area subject to protection under the Bylaw.
- 22) CONSERVATION COMMISSION or COMMISSION that body in Arlington comprised of members lawfully appointed pursuant to M.G.L. c. 40, Section 8C.
- 23) CREEK the same as "stream."
- 24) CUMULATIVE EFFECT an effect that is significant when considered in combination with other activities that have occurred, are going on simultaneously, or that are likely to occur, whether such other activities have occurred or are contemplated as a separate phase of the same project, such as the build-out of a subdivision or an industrial park, or unrelated but reasonably foreseeable actions, including other development projects that are currently under construction, under review or that may be expected to come forward.
- 25) DATE OF ISSUANCE the date a permit, order, or determination is mailed, as evidenced by a postmark, or the date it is hand-delivered.
- 26) DATE OF RECEIPT the date of delivery to an office, home or usual place of business by mail or hand delivery.
- 27) DETERMINATION:
  - a. DETERMINATION OF APPLICABILITY a written finding by the Conservation Commission after a public hearing as to whether a site or the work proposed thereon is subject to the jurisdiction of the Bylaw.
  - b. DETERMINATION OF SIGNIFICANCE a written finding by the Conservation Commission, after a public hearing, that the area on which the proposed work is to be done or which the proposed work will alter is significant to one or more of the interests identified in and protected by the Bylaw and these regulations.
  - c. NOTIFICATION OF NONSIGNIFICANCE a written finding by the Conservation Commission, after a public hearing, that the area on which proposed work is to be done, or which the proposed work will alter, is not significant to any of the interests of the Bylaw.
- 28) DBH ("Diameter at Breast Height") the diameter (in inches) of the trunk of a tree (or, for multiple trunk trees, the aggregate diameters of the multiple trunks) measured 4 ½ feet from the existing grade at the base of the tree.
- 29) DREDGE to deepen, widen or excavate, either temporarily or permanently.
- 30) DROUGHT a period of abnormally dry weather long enough to cause a serious hydrological imbalance.
- 31) EXTENSION PERMIT a written extension of time within which the authorized work shall be completed.
- 32) EXTREME HEAT a Heat Advisory from the National Weather Service, issued when the heat index is forecasted to exceed 100°F for two or more hours.
- 33) EXTREME WEATHER EVENT weather at the extremes of the historical distribution lying in the outermost 10 percent of a place's history, including but not necessarily limited to droughts, high winds and microbursts, blizzards and ice storms, excessive precipitation, wildfires, tornadoes, and severe thunderstorms or hurricanes.
- 34) FILL To deposit any material so as to raise the elevation of land surface or ground, either temporarily or permanently.
- 35) FLOOD CONTROL the prevention or reduction of flooding and flood damage, both as currently expected to occur and as projected to occur based on the best available data regarding the impacts of climate change.

- 36) GROUNDWATER all subsurface water contained in natural geologic formations or artificial fill including soil water in the zone of aeration. Activities within 100 feet of resource areas shall not significantly alter the existing quality or elevation of naturally occurring groundwater.
- 37) IMMINENT RISK TO PUBLIC HEALTH AND SAFETY means the vegetation is an imminent risk to public health or safety or property as confirmed in writing and submitted to the Commission by the Arlington Tree Warden, Fire Department Representative, Public Safety Officer, or a certified arborist.
- 38) IMPACTS OF CLIMATE CHANGE mean, but are not necessarily limited to, (i) extreme heat (ii) the timing, frequency, intensity, and amount of precipitation, (iii) storm surges and rising water levels, (iv) increased intensity and/or frequency of storm events or extreme weather events, and (v) frequency, intensity and duration of droughts.
- 39) IMPERVIOUS SURFACE any material or structure on, above, or below ground that prevents water from infiltrating through the underlying soil.
- 40) IN or WITHIN an area subject to protection under the Bylaw means in, through, under, over, cantilevered over, shading; does not require physical touching of said area subject to protection. With respect to structures, "In" is measured from the drip-line of the roof or foundation or footing, whichever is closer to the resource area.
- 41) INTERESTS IDENTIFIED IN THE BYLAW those interests specified in Section 1 of the Bylaw and Section 1(B) of these regulations. Also called Bylaw Interests or Resource Area Values.
- 42) ISSUING AUTHORITY the Arlington Conservation Commission.

43)

- 44) LAKE any open body of fresh water with a surface area of 10 acres or more, and shall include great ponds.
- 45) LAND SUBJECT TO FLOODING defined in Section 24.
- 46) LAND UNDER WATER BODIES AND WATERWAYS the bottom of or land under the surface of a creek, river, stream, pond or lake. Land under water bodies is further defined in Section 23.
- 47) LOT an area of land in one ownership, with definite boundaries. When an area of land is comprised of more than one lot, the lots share a common boundary and are owned or controlled by the same entity or individual(s), and the lots combined are used for the same purpose or enterprise, the Commission may consider the lots as a single LOT.
- 48) MARSH, FRESHWATER WETLAND, SWAMP, WET MEADOW, BOG defined in Section 22.
- 49) MEADOW (or WET MEADOW) defined in Section 22.
- 50) NATIVE PLANTS –
- 51) NOAA ATLAS 14 point precipitation frequency estimates or data compiled by the National Oceanic and Atmospheric Administration's ("NOAA") National Weather Service (NOAA Atlas, Volume 10), used in evaluation/planning for flood storage capacity and other extreme precipitation measures; NOAA 14 = mid-range of 90% confidence interval; NOAA 14+ = 0.9 x upper bound of 90% confidence interval; NOAA 14++ = upper bound of 90% confidence interval .
- 52) NOTICE OF INTENT the written notice filed by an Applicant intending to remove, fill, dredge or alter an area subject to protection under the Massachusetts Wetlands Protection Act, M.G.L. c. 131, Section 40, or the Bylaw, or both.

Comment [ES3]: Cathy to provide definition

- 53) ORDER an order of conditions, superseding order or final order, whichever is applicable, issued pursuant to M.G.L. c. 131, Section 40 or the Bylaw, or both.
- 54) OWNER OF LAND ABUTTING THE ACTIVITY the owner of land sharing a common boundary or corner with the site of the proposed activity in any direction, including land located directly across a street, way, creek, river, stream, brook or canal.
- 55) PERMIT the document issued by the Conservation Commission pursuant to this Bylaw which allows work in accordance with conditions set by the Commission in the resource areas protected by this Bylaw; also see "Order" in this definition section.
- 56) PERMIT DENIAL the document issued by the Conservation Commission pursuant to the Bylaw which disallows proposed work.
- 57) PERSON any individual, group of individuals, associations, partnerships, corporations, business organizations, trust, estate, Commonwealth of Massachusetts when subject to town Bylaws, any public or quasi-public corporation or body when subject to town Bylaws or any other legal entity, including the Town of Arlington or its legal representative, agents or assigns.
- 58) PERSON AGGRIEVED any person who, because of an act of failure to act by the Conservation Commission, may suffer an injury in fact which is different either in kind or magnitude from that suffered by the general public and which is within the scope of the interests identified in the Bylaw.
- 59) PERVIOUS SURFACE any natural or constructed material or structure that allows water infiltration. Decking shall also be considered a pervious material provided one of the following soil types are below the decking: soils listed as Class I, II and III soils as defined in 310 CMR 15.243 and 15.244 based upon the general soil classification used by the U.S. Department of Agriculture. "Pervious pavers," "pervious asphalt," and other similar materials will only be considered pervious if a suitable design for the system as a whole is submitted and approved. Otherwise, these constructed materials will be considered impervious.
- 60) PLANS such data, maps, engineering drawings, calculations, specifications, schedules and other materials, if any, deemed necessary by the Conservation Commission to describe the site and/or work to determine the applicability of the Bylaw or to determine the impact of the proposed work upon the interests identified in the Bylaw.
- 61) POND any open body of fresh water, either naturally occurring or man-made by impoundment or excavation, which is never without standing water due to natural causes, except in periods of extended drought. For purposes of this definition, extended drought shall mean any period of four or more months during which the average rainfall for each month is 50% or less of the ten-year average for that same month. Basins or lagoons which are part of wastewater treatment plants, swimming pools or other impervious manmade retention basins shall not be considered ponds.
- 62) PREVENTION OF POLLUTION the prevention or reduction of chemicals (e.g., nutrients, hydrocarbons, solvents, metals, vapors) known or suspected of causing harm to humans, plants, or animals via exposure to any media (air, water, soil, sediment).
- 63) PRIVATE WATER SUPPLY any source or volume of surface or groundwater demonstrated to be in any private use or shown to have potential for private use for domestic purposes.
- 64) PROJECT LOCUS the lot on which an applicant proposes to perform an activity subject to regulation under the Bylaw

- 65) PROJECT SITE the area within the Project Locus that comprises the limit of work for activities, including but not limited to, the dredging, excavating, filling, grading, the erection, reconstruction or expansion of a building or structure, the driving of pilings, the construction or improvement of roads or other ways, and the installation of drainage, stormwater treatment, environmentally sensitive site design practices, sewage and water systems.
- 66) PROTECTION OF FISHERIES protection of the capacity of an area subject to protection under the Bylaw to prevent or reduce contamination or damage to fish and to serve as their habitat and nutrient source.
- 67) PROTECTION OF WILDLIFE the protection of any plant or animal species, including but not limited to those listed as endangered, threatened or special concern, or on the Watch List by the Massachusetts Natural Heritage Program; listed as Federally Endangered or Federally Threatened by the U.S. Fish and Wildlife Service; deemed locally threatened, in writing, by the Conservation Commission; and means protection of the ability of any resource area to provide food, breeding habitat, shelter or escape cover and species falling within the definition of wildlife set forth in these regulations.
- 68) PUBLIC WATER SUPPLY any source or volume of surface water or groundwater demonstrated to be in public use or approved for water supply pursuant to M.G.L. c. 111, Section 160 by the Division of Water Supply of the Department of Environmental Protection or shown to have a potential for public use.
- 69) QUORUM refers the number of Commissioners who must be present before business may be transacted; here, it shall mean a majority of the number of Commissioners then in office.
- 70) REMOVE to take away any type of material, thereby changing the elevation of land surface or ground, either temporarily or permanently.
- 71) REQUEST FOR DETERMINATION OF APPLICABILITY a written request made by any person to the Conservation Commission for a determination as to whether a site or work thereon is subject to the Bylaw.
- 72) RESILIENCE the capacity to prevent, withstand, minimize, respond to, adapt to, and recover from adverse climate change impacts; to build capability and ability of the resource area to minimize and survive negative impacts of climate change to resource area values.
- 73) RESOURCE AREA is used synonymously with "area subject to protection under the Bylaw," each one of which is listed in the Bylaw and in Section 2 of these regulations.
- 74) RESOURCE AREA ENHANCEMENT with the Commission's prior approval: removal or management of invasive species; removal of man-made debris, garbage, or trash; stabilization of bank or other resource area; or planting of non-invasive species of vegetation; or activities to enhance and increase climate change adaptation/resilience.
- 75) RESOURCE AREA VALUES collectively, "Resource Area Values" or "Interests of the Bylaw" may include but not be limited to the following: public or private water supply protection; ground water supply protection; flood control; erosion and sedimentation control; storm damage prevention; pollution prevention; protection of surrounding land and other homes or buildings; wildlife, plant, and aquatic species protection; habitat protection; and protection of the natural character or recreational values of the wetland resources.

- 76) RIVER any natural flowing body of water that empties to any ocean, lake, pond, reservoir, stream, or other river.
- 77) RIVERFRONT AREA the area of land between a river's mean annual high water line and a parallel line measured 200 feet horizontally landward of the mean annual high water line.
- 78) SIGNIFICANT shall mean plays a discernable role; e.g., a resource area is significant to an interest identified in the Act when it plays a role in the provisions or protection, as appropriate, of that interest.
- 79) STORM DAMAGE PREVENTION measures taken to mitigate the severity and consequence of a storm event on the resource area and the prevention of damage caused by water from storms, as currently occurs and is predicted by best available data to occur from the impacts of climate change, including but not limited to erosion and sedimentation, damage to vegetation, property or buildings or damage caused by flooding, waterborne debris or waterborne ice.
- 80) STREAM a body of running water, including brooks and creeks, which moves in a definite channel in the ground due to hydraulic gradient, and includes streamlets and rivulets. A portion of a stream may flow through a culvert or beneath a bridge. Such a body of running water which does not flow throughout the year (i.e., which is intermittent) is a stream.
- 81) STRUCTURE means a combination of materials or things arranged or constructed for permanent or temporary occupancy, shelter, or use, such as a building, bridge, trestle, wireless communications facility, tower, rip rap associated with stormwater outfalls, framework, retaining wall, tank, tunnel, tent, shed, stadium, reviewing stand, platform, swimming pool, sports court, shelters, piers, wharves, bin, fence, sign, or the like.
- 82) TREE REMOVAL any act that will cause a tree to die within a three-year period.
- 83) VEGETATED WETLANDS defined in Section 22.
- 84) VULNERABILITY (to climate change impacts) the degree to which a resource area is susceptible to or predisposed to be adversely affected by climate change impacts (including climate variability and extremes); as a function of exposure, sensitivity, and adaptive capacity.
- 85) WITHIN see IN above.
- 86) WILDLIFE any non-domesticated mammal, bird, reptile, amphibian, fish, mollusk, arthropod or other invertebrate other than a species of the Class insects which has been determined by the Commonwealth of Massachusetts or any agency thereof to be a pest whose protection under the provisions of the Bylaw would be a risk to man.
- 87) WILDLIFE HABITAT the area being used by or necessary to provide breeding or nesting habitat, shelter, food and water for any animal species.
- 88) WORK shall mean the same as "activity."

#### **Section 5 - Time Periods**

All time periods of 10 days or less specified in the Bylaw and these regulations shall be computed using business days only. In the case of a Determination or Order, such period shall commence on the first day after the date of issuance and shall end at the close of business on the 10th business day thereafter. All other time periods specified in the Bylaw and regulations shall

be computed on the basis of calendar days, unless the last day falls on a Saturday, Sunday or legal holiday, in which case the last day shall be the next business day following.

## **Section 6 - Actions by Conservation Commission**

A. Where the Bylaw states that a particular action (except receipt of a request or notice) is to be taken by the Conservation Commission, that action is to be taken by more than half the members present at a meeting of at least a quorum. A quorum is defined as a majority of the members then in office.

B. Where the Bylaw states that a determination, permit, or notification or certificate of compliance shall be signed and issued by the Conservation Commission, that action is to be taken by the majority of the quorum present at a public meeting or hearing, or by a majority of the members then in office who need not convene as a body in order to sign said permit or notification, provided that the Commission met pursuant to the Open Meeting Law, M.G.L. c. 30A, Sections 18 through 25, when voting on the matter.

C. Where the Bylaw states that the Conservation Commission is to receive a request or notice, Conservation Commission means a member of the Conservation Commission or an individual designated by the Conservation Commission to receive such request or notice.

## **Section 7 - Working Sessions**

When the Commission has time available, as a matter of courtesy, it may, but is not required, to conduct a working session with any person seeking guidance or direction on what type of application to file with the Commission, and what information the Commission might like to see in such an application in addition to that specified elsewhere in these regulations or the state Wetlands Protection Regulations. No one has a right to a working session.

Any working session shall be held in accordance with the Open Meeting Law, M.G.L. c. 30A, Sections 18-25.

For any working session, notwithstanding the Plan requirements in Section 13, the following information at a minimum must be provided (at the working session):

- (1) a map or plan showing the location of the proposed work;
- (2) photographs (minimum 5" x 7" size) of the area of the proposed work; and
- (3) a sketch of the area of the proposed work, showing existing conditions (structures, approximate locations of actual or potential resource areas).

Statements by the Commission or any Commission member in a working session shall not be construed as prejudging a project or guaranteeing a particular action by the Commission on a subsequent filing. The Commission shall not be bound any comments or opinions offered at a working session. A person who relies on any statements or information provided at the working session does so at his or her own risk.

## Section 8 – Administrative Review of Minor Projects or Work

- A. Findings. Some projects are simple, small in scale, minor, or routine, and such projects involve very little activity or alteration in Resource Areas protected by the Bylaw and are not likely to have a significant or cumulative effect on the Resource Area Values protected by the Bylaw. Such projects may be reviewed and approved by the Conservation Agent rather than the full Commission.
- B. Applicability. If a project meets the criteria in Section 8.B.(1) or 2 below, the work may be reviewed and approved by the Conservation Agent. If the Conservation Agent has any doubt that a project meets these criteria, the Applicant will be required to file a Request for Determination of Applicability or a full application for a permit (Notice of Intent).
  - (1) A project that is listed in B.(2) below may be approved by the Conservation Agent if it meets <u>all</u> of the following conditions:
    - The work is proposed only in the AURA or Riverfront Area and not in any other Resource Area.
    - b. Work is not proposed within the first 50 feet of the AURA or Riverfront Area other than conversion of impervious surface to vegetated area provided erosion and sedimentation controls are implemented during construction.
    - c. The work shall not include the uprooting of non-invasive vegetation or mowing to the ground or clear-cutting vegetation.
    - d. Work will not adversely impact the climate change resilience functions of the project area.
  - (2) A project may be approved by the Conservation Agent if it falls within one of the following activities and it meets the conditions listed in B.(1) above:
    - a. Fencing, provided that it will not constitute a barrier to wildlife movement and there are openings along the bottom at least 4 inches high to allow wildlife movement; a sketch or survey of the property showing the proposed fence location must accompany the application.
    - b. Installation of dried laid (not mortared) stone walls and compacted gravel footing, provided they do not constitute a barrier to wildlife movement; a sketch or survey of the property showing the proposed fence location must accompany the application.
    - c. Vista pruning of shrubs and trees.
    - d. Removal of invasive species by hand within the Buffer Zone and Adjacent Upland Resource Area provided native plants are planted in the same area provided erosion and sedimentation controls are implemented during construction are implemented during work.
    - e. Planting of native species of trees, shrubs, or groundcover, but excluding planting or expansion of lawn area.
    - f. The conversion of impervious surface to vegetated area, provided erosion and sedimentation controls are implemented during construction;

- g. Activities that are temporary in nature, having negligible impacts, and are necessary for planning and design purposes (e.g., installation of monitoring wells, exploratory borings, sediment sampling, and surveying); a sketch or survey of the property showing the proposed locations and resource areas must accompany the application.
- Pervious walkways of no more than 30 inches in width as long as no trees or shrubs will be removed.

#### C. Procedure:

- a. The Applicant shall complete and submit the Administrative Review Form that shall contain sufficient information to determine where the project or work is proposed and whether it meets the requirements set forth in this section.
- b. The Applicant must provide a complete written description of all the work proposed and protective or mitigation measures proposed.
- c. The Conservation Agent shall visit the site and the boundaries of Resource Areas must be clearly evident to the Conservation Agent.
- d. The Conservation Agent shall determine whether the project or work meets the criteria listed in Section 8(B) above.
- e. The Conservation Agent shall issue an Administrative Review Decision within 10 Conservation Agent work days of receipt of the Administrative Review Form that fulfills the information requirements of this section.
- f. The Conservation Agent may approve the work as proposed, approve it with conditions, or deny the work.
- g. The decision will be filed in the Conservation Department and a copy provided to the Applicant.
- h. The Conservation Agent shall provide an up-to-date list of projects approved or denied under Administrative Review with the Commission.
- D. Appeal. The decision rendered by the Conservation Agent may be appealed by the person seeking Administrative Review by filing a Request for Determination of Applicability.

## Section 9 - Determination of Applicability

- A. Requests for determination of applicability.
  - (1) Any person who desires a determination as to whether the Bylaw applies to land, or to work that may affect an area subject to protection under the Bylaw, may submit to the Conservation Commission electronically and by certified mail, regular mail, or hand delivery a written request for a determination of applicability and other application materials in accordance with the submittal requirements set forth in the filing guidelines for requests for determination of applicability provided in these regulations. Said person shall also provide the number of paper copies as set forth in the filing guidelines of the Commission.
  - (2) Simultaneously with filing the Request for Determination of Applicability, the applicant shall provide notification to each abutter by hand delivery or certified mail, return receipt requested, first class mail, postage prepaid. An affidavit specifying how and when abutter notice was made shall accompany the RDA. The contents of the abutter notification shall

- be specified by the Commission and shall, at a minimum, provide a brief description of the proposed work (if any), identify resource areas involved, list the location (street address, assessors lot and map identifiers), specify where a copy of the request may be obtained, and the date, time, and place of the hearing.
- (3) Said request shall include sufficient information to enable the Conservation Commission to find and view the area and determine whether the proposed work will alter an area subject to protection under the Bylaw.
- (4) A request for determination of applicability shall include certification that the owner of the area subject to the request, if the person making the request is not the owner, has been notified in writing via certified mail, return-receipt requested that a determination is being requested under the Bylaw.
- (5) A request for determination of applicability shall be filed with the Commission no less than 10 days prior to the Commission's next meeting and simultaneously copies of the request for determination of applicability shall be hand delivered or mailed to each Commission member (including associate members). Failure to meet such filing and distribution deadline shall be cause for the Commission to continue or defer discussion of the request for determination to the following meeting.

#### B. Determination of applicability.

- (1) Within 21 days after the date of receipt of the request for a determination of applicability, the Conservation Commission shall hold a public hearing on the request for a determination of applicability. Notice of the time and place of the public meeting at which the determination will be made shall be given by the Conservation Commission at the expense of the person making the request not less than five business days prior to such meeting, by publication in a newspaper of general circulation in the Town of Arlington, and by mailing a notice to the person making the request, the property owner if not the applicant. The Commission will forward the notice of this hearing to the Town Manager, Board of Selectmen, Town Clerk, Planning Department, Town Counsel, Department of Public Works, Town Engineer, Zoning Board of Appeals, Board of Health, Building Inspector, and the Redevelopment Board. Notice shall also be given in accordance with the Open Meeting Law, M.G.L. c. 30A, Sections 18 - 25. Said determination shall be signed and issued by the Conservation Commission, and copies thereof shall be sent by the Conservation Commission to the person making the request and to the owner within 21 days of the close of the public hearing or any continuances thereof. Said determination shall be valid for three years from date of issuance and may not be extended or renewed.
- (2) The Conservation Commission shall find that the Bylaw applies to the land, or a portion thereof, if it is an area subject to protection under the Bylaw as defined in Section 2(A) above. The Conservation Commission shall find that the Bylaw applies to the work on the portion thereof, if it is an activity subject to the regulations under the Bylaw as defined in Section 2(B) above.
- (3) An application for permit shall be filed in the event of a positive determination, and all of the procedures set forth in Section 12 shall apply.
- (4) Request for Determination of Applicability vs. Notice of Abbreviated Resource Area Delineation. No Request for Determination of Applicability or Determination of Applicability shall be used to evaluate or confirm the delineation of any Resource Area.

## **Section 10 – Emergency Certification**

A. Any person requesting permission to perform an emergency project, or within 24 hours of commencing an emergency project, shall specify in writing why the project is necessary for the protection of the health or safety of the citizens of the Town and what agency of the Commonwealth (or subdivision thereof) or Town entity is to perform the project or has ordered the project to be performed. Work may not proceed unless the Commission or its Agent has certified the work to be necessitated by an emergency. In no case shall work or alteration by such certification extend beyond the minimum amount of work and time necessary to abate the emergency. If the project is certified to be an emergency by the Conservation Commission, its Agent, its Chair or Vice Chair, or the Department of Environmental Protection, the certification shall include a description of the work which is to be performed and shall not include work beyond that necessary to abate the emergency. If practicable, a site inspection shall be made prior to certification. If issued by the Conservation Agent, the emergency certification must be ratified at the next meeting of the Conservation Commission.

B. An emergency certification may be issued by the Conservation Commission Chair, Vice Chair, or Agent and shall be issued only for the protection of public health or safety.

C. The time limitation for performance of emergency work shall not exceed 30 days, or 60 days for Immediate Response Actions approved by the Bureau of Waste Site Cleanup (BWSC) of the Department of Environmental Protection in accordance with the provisions of 310 CMR 40.0410. The emergency certification may be extended for an additional 15 days only for good cause.

D. In appropriate circumstances, the Commission may require that within 14 days of issuance of an emergency certification, a Notice of Intent/permit application shall be filed by the recipient of the emergency certification with the Conservation Commission for review as provided by the Bylaw and these Regulations.

E. Upon failure to meet the requirements of this section and other requirements of the Conservation Commission, the Conservation Commission may, after notice and a public hearing, revoke or modify an emergency certification and order restoration and mitigation measures.

## **Section 11 – Notice of Intent/Application for Permit**

A. Any person who proposes to do work or activity that will remove, fill, dredge or otherwise alter any area subject to protection under the Bylaw shall submit an application, called a Notice of Intent, for a permit on forms specified by the Conservation Commission and in conformance with the plan requirements in Section 13. Simultaneously with filing the Notice of Intent with the Commission or its Agent, an applicant shall provide an electronic copy of the application to the Commission and provide the number of paper copies specified by the Conservation Agent, and said paper copies shall be provided with envelopes with sufficient first-class postage,

prepaid, for mailing (by the Agent) of such copies to Commission members. Failure to provide the specified number of paper copies or electronic copies shall be grounds for the Commission to continue the public hearing without the applicant's consent. Simultaneously with filing the Notice of Intent, the applicant shall provide notification to each abutter by hand delivery or certified mail, return receipt requested. The contents of the abutter notification shall be specified by the Commission and shall, at a minimum, provide a description of the proposed work, location (street address and assessor's map and lot identifier), where a copy of the request may be obtained, and the date, time, and location of the hearing.

- B. Upon receipt of the application materials referred to in Subsection A above, the Conservation Commission shall assign a file number, which file number shall be that issued by the Department of Environmental Protection ("DEP") for a Notice of Intent also submitted under the Wetlands Protection Act. The DEP will notify the applicant of the file number. The designation of file number shall not imply that the plans and supporting documents have been accepted or judged adequate for the issuance of a permit and does not prevent the Commission from requesting additional information at a later time. For a Notice of Intent not also filed under the Wetlands Protection Act, the Commission shall issue a file number.
- C. If only a portion of a proposed project or activity lies within an area subject to protection under the Bylaw and the remainder of the project or activity lies outside those areas, all aspects of the project must be described, provided also that in such circumstances the Notice of Intent shall also contain a description and calculation of peak flow and estimated water quality characteristics of discharge from a point source (both closed and open channel), when the point of discharge falls within an area subject to protection under the Bylaw.
- D. A public hearing shall be held by the Conservation Commission with 21 days of receipt of the complete Notice of Intent.
- E. An Abbreviated Notice of Resource Area Delineation may be filed to confirm the delineated boundary of Vegetated Wetland or other Area Subject To Protection Under the Bylaw on the site. If utilized, an applicant must file an Abbreviated Notice of Resource Area Delineation prior to filing a Notice of Intent. Alternatively, the boundary of a Resource Area may be determined through the filing of a Notice of Intent. The procedures for a Notice of Intent shall be used for an Abbreviated Notice of Resource Area Delineation. Consistent with Section 6 of the Bylaw, "Applicant's Obligation", the applicant shall have the burden of proving by a preponderance of the credible evidence from a competent source that the delineation of Vegetated Wetland or other Area Subject To Protection Under the Bylaw is accurate.
- F. If the Commission determines that the applicant incorrectly or incompletely delineates a Resource Area(s), the Commission shall request that the applicant provide the correct delineation or missing information. If the correct delineation or missing information is not provided, the Commission shall close the hearing and issue a denial Order of Resource Area Delineation or denial Order of Conditions within 21 calendar days, specifying each Resource Area that is incorrectly or incompletely delineated. The Commission shall have the authority to deny any proposed Resource Area delineation when: 1) the application is incomplete; 2) the delineation is

#### **Arlington Regulations for Wetlands Protection**

Draft - February 18, 2021

incorrect; or 3) the Commission requires additional information that is not provided by the applicant.

G. Review period. Resource area boundary delineations shall be reviewed only between April 1 and December 1 of each year. Delineations may be reviewed at the sole discretion of the Commission between December 1 and April 1, and shall be reviewed only when site conditions are such that the Commission believes it can adequately review the relevant resource area indicators (e.g., soils, vegetation, topography, hydrology).

## Section 12 - Filing Fees, Consultants, & Consultant Fees

#### A. Filing Fees

- (1) Rules:
  - a. Permit fees are payable at the time of application and are nonrefundable.
  - b. Permit fees shall be calculated by the Conservation Commission per the Bylaw.
  - c. Town, county, state, and federal projects are exempt from fees.
  - d. Upon request and demonstration of a compelling reason to do so, which circumstances the Commission anticipates shall be rare, the Commission in its sole discretion may grant a waiver or variance from, or reduction of, Permit fees.
- (2) These filing fees are in addition to the filing fees charged under M.G.L. c. 131, Section 40, the Wetlands Protection Act.
- (3) The requirements of this section shall be commensurate with the nature, scope, type, and cost of the proposed project or activity.
- (4) Fees:
  - a. Fees are payable at the time of filing the application and are non-refundable.
  - b. Fees shall be calculated per schedule below.
  - c. Town, County, State, and Federal Projects are exempt from fees.
  - d. These fees are <u>in addition</u> to the fees paid under M.G.L. Ch. 131, s.40 (the Wetlands Protection Act).

#### (5) Categories

Category	Fee
(R1) RDA	\$150 local fee, no state fee
(N1) Minor Project	\$200 (house addition, tennis court, swimming pool,
	utility work, work in/on/or affecting any body of water,
	wetland or floodplain).
(N2) Single Family	\$600
Dwelling	
(N3) Multiple Dwelling	\$600 + \$100 per unit all or part of which lies within 100
Structures	feet of wetlands or within land subject to flooding.
(N4) Commercial,	\$800 + 50¢/s.f. wetland disturbed; 2¢/s.f. land subject to
Industrial, and Institutional	flooding or buffer zone disturbed.
Projects	
(N5) Subdivisions	\$600 + \$4/l.f. feet of roadway sideline within 100 ft. of
	wetlands or within land subject to flooding.

**Comment [ES4]:** NS: Debatable as to whether the "Consultant" provisions (w/o the fees) should be a separate section.

(N6) Other Fees	Copies, printouts; per public records law
(N7) Minor Project Change	\$50
(N8) Work on Docks,	\$4 per linear foot
Piers, Revetments, Dikes,	
etc	
(N9) Resource Boundary	\$1 per linear foot
Delineation (ANRAD)	
(N10) Certificate of	No charge if before expiration of Order, \$200 if after
Compliance (COC or	that date.
PCOC)	
(N11) Amendments	\$300 or 50% of original local filing fee, whichever is
	less.
(N12) Extensions	a. Single family dwelling or minor project - \$100.
	b. Other - \$150.
(N13) Consultant Fee	Per estimate from consultant

### B. Consultants and Consultant Fees

Upon receipt of a Notice of Intent, Abbreviated Notice of Resource Area Delineation, or Request for Determination of Applicability, or at any point during the hearing process, the Commission is authorized <u>pursuant Bylaw § 16(B)(11)</u> as well as, <u>independently</u>, to <u>G.L. Ch. 44, § 53G</u> to require an applicant to pay a fee for the reasonable costs and expenses borne by the Commission for specific expert engineering and other consultant services deemed necessary by the Commission to come to a final decision on the application. The fee is called the "Consultant Fee."

#### (1) Consultant and Consultant Fees pursuant to G.L. Ch. 44, § 53G

Purpose. As provided by G.L. Ch. 44 §53G, the Town of Arlington Conservation Commission may impose reasonable fees for the employment of outside consultants, engaged by the Conservation Commission, for specific expert services. Such services shall be deemed necessary by the Commission to come to a final decision on an application submitted to the Conservation Commission pursuant to the requirements of: the Wetlands Protection Act (G.L. Ch. 131 §40), the Arlington Wetlands Protection non-zoning wetlands bylaw, Conservation Commission Act (G.L. Ch. 40 §8C), or any other state or municipal statute, bylaw or regulation, as they may be amended or enacted from time to time. The Conservation Commission may also impose fees for other consultant services, related to application review, or permit conditioning or monitoring, under any of the above-referenced laws or regulations.

Special Account. Funds received pursuant to these rules shall be deposited with the Town of Arlington Treasurer who shall establish a special account for this purpose. Expenditures from this special account may be made at the direction of the Conservation Commission without further appropriation as provided in G.L. Ch. 44 §53G. Expenditures from this account shall

Comment [NS5]: This is cut and pasted from the CC's June 21, 2007 "Rules for Hiring Outside Consultants" from the CC webpage. If CC agrees to include, we might add some number or letters or bold headers to each paragraph.

be made only in connection with a specific project or projects for which a consultant fee has been collected from the applicant. Expenditures of accrued interest may also be made for these purposes.

Consultant Services. Specific consultant services may include but are not limited to resource area survey and delineation, analysis of resource area values, hydrogeologic and drainage analysis, impacts on municipal conservation lands, and environmental or land use law. Services may also include on-site monitoring during construction, or other services related to the project deemed necessary by the Commission. The consultant shall be chosen by, and report only to, the Commission and/or its administrator.

Notice. The Conservation Commission shall give written notice to the applicant of the selection of an outside consultant. Such notice shall state the identity of the consultant, the amount of the fee to be charged to the applicant, and a request for payment of said fee in its entirety. Such notice shall be deemed to have been given on the date it is mailed (via first-class mail) or delivered. No such costs or expenses shall be incurred by the applicant if the application or request is withdrawn within five days of the date notice is given.

Payment of Fee. The fee must be received prior to the initiation of consulting services. The Commission may request additional consultant fees if necessary review requires a larger expenditure than originally anticipated or new information requires additional consultant services. Failure by the applicant to pay the consultant fee specified by the Commission within ten (10) business days of the request for payment, or refusal of payment, shall be cause for the Commission to deny the application based on lack of sufficient information to evaluate whether the project meets applicable performance standards in 310 CMR 10.00 or the Arlington Wetlands Protection Bylaw or its regulations. An appeal stops the clock on the above deadline; the countdown resumes on the first business day after the appeal is either denied or upheld. A denial for lack of information may be based solely on the lack of the third party consultant review identified as necessary by the Commission. The Commission shall specify in its denial the nature of the information lacking which its chosen consultant would provide, e.g. the questions it needs answered.

Failure by the applicant to pay the consultant fee specified by the Commission within ten (10) business days of the request for payment shall be cause for the Commission to deny the permit application submitted under the Arlington Wetlands Protection Bylaw.

Appeals. The applicant may appeal the selection of the outside consultant to the Arlington Select Board, who may only disqualify the outside consultant selected on the grounds that the consultant has a conflict of interest or does not possess the minimum required qualifications. The minimum qualifications shall consist of either an educational degree or three or more years of practice in the field at issue or a related field. Such an appeal must be in writing and received by the Arlington Select Board and a copy received by the Conservation Commission, so as to be received within ten (10) days of the date consultant fees were requested by the Conservation Commission. The required time limits for action upon the application shall be extended by the duration of the administrative appeal.

Return of Unspent Fees. When the Commission's review of a project is completed and an Order of Conditions, Determination of Applicability, or Order or Resource Area Delineation is issued, any balance in the special account attributable to that project shall be returned within 30 days. The excess amount, including interest, shall be repaid to the applicant or the applicant's successor in interest. For the purpose of this regulation, any person or entity claiming to be an applicant's successor in interest shall provide the Commission with appropriate documentation. A final report of said account shall be made available to the applicant or applicant's successor in interest.

#### (2) Consultants and Consultant Fee pursuant to Bylaw § 16(B)(11)

This Consultant Fee is pursuant to Bylaw § 16(B)(11) and independent from the Commission's "Rules for Hiring Outside Consultants" pursuant to authority under G.L. Ch. 44, § 53G, the Commission is authorized to require an applicant to pay \_\_\_\_\_adopted June 21, 2007

The specific consultant services may include, but are not limited to, performing or verifying the accuracy of a resource area survey and delineation, analysis of resource area functions, including but not limited to wildlife habitat evaluations, hydrogeologic and drainage analysis, and advice on environmental or land use law and legal issues.

The Commission may require the payment of the Consultant Fee at any point in its deliberations prior to a final decision. Failure by the applicant to pay the Consultant Fee specified by the Commission within five (5) business days of the request for payment shall be cause for the Commission to deny issuance of a permit or other requested action.

The applicant shall pay the fee to be put into a revolving fund, which may be drawn upon by the Commission for specific consultant services approved by the Commission at one or more of its public meetings. The consultant shall be chosen by, and report only to, the Commission or its designee.

The exercise of discretion by the Commission in making its determination to require payment of a Consultant Fee shall be based upon its reasonable finding that additional information acquirable only through outside consultants would be necessary for the making of an objective decision.

The Commission shall return any unused portion of the Consultant Fee to the applicant unless the Commission decides at a public meeting that other further or additional or different services of the consultant are necessary to make an objective decision. Any applicant aggrieved by the imposition of or size of the Consultant Fee, or any act related thereto, may appeal according to the provision of the Massachusetts General Laws.

## **Section 13 - Plan Requirements**

- A. Plans shall describe the proposed activity and its effect on the environment. Due regard shall be shown for all natural features such as large trees, watercourses and water bodies, wildlife habitat and similar community assets.
  - (1) The following items are set out as a minimum standard. The applicant may submit, or be required to submit, any further information that will assist in the Commission's review and that is deemed necessary to determine the proposed effect on the interests protected by the Bylaw. The Conservation Commission may waive any of these plan requirements it deems insignificant or irrelevant for a particular project.
  - (2) An eight-and-one-half-inch-by-eleven-inch reproduction of the USGS quadrangle sheet showing the project locus, and in the case where the project requires two or more plans to show the locus, an eight-and-one-half-inch-by-eleven-inch sheet clearly identifying the proposed site and work in addition to the labeled boundaries of the resource areas.

#### B. Plan content.

- (1) The following information shall be provided:
  - (a) The names and addresses of the record owner(s), the applicant(s) and of all abutters, as determined by the most recent local tax list, unless the applicant shall have a more recent knowledge of such abutters.
  - (b) Description of any alteration to flood storage capacity on the site. Include calculations and watershed maps if necessary.
  - (c) Soil characteristics in representative portions of the site.
  - (d) The Commission may in its sole discretion require the applicant to provide a stormwater management plan and calculations based on, at a minimum, NOAA Atlas 14P Plus for analysis of the ten-year, fifty-year and one-hundred-year-storms. Calculations shall show existing and proposed runoff conditions for comparative purposes.
  - (e) Methods to be used to stabilize and maintain any embankments facing any wetlands, or show slope on plans of less than or equal to 3 to 1.
  - (f) Methods to control erosion during and after construction.

#### C. Plan specifications.

- (1) Drawings for a Request for Determination of Applicability must be to scale. All other application plans (e.g., for Notices of Intent) shall be drawn to scale (one inch equals 40 feet maximum) with the title designating the name of the project, location, the name(s) of the person(s) preparing the drawings and the date prepared, including all revision dates.
- (2) The Commission may require that plans and calculations be prepared and stamped by a registered professional engineer or a registered land surveyor of the Commonwealth of Massachusetts when, in the Commission's judgment, the proposed work warrants such professional certification. The Commission may also require preparation and submission of supporting materials by other professionals including, but not limited to, registered landscape architect, environmental scientist, geologist or hydrologist when in its judgment the complexity of the proposed work and/or the wetland values of the Resource Areas warrants the relevant specialized expertise. Submitted materials may be used by the Commission to evaluate the effects of the proposed project/work on wetland values and compliance with these regulations. Submission of requested materials does not imply approval of the project.

- (2) Drawings must clearly delineate the boundary and location of all Resource Areas protected by the Bylaw on the project site and within 100 feet, regardless of whether or not the Applicant believes the work is subject to M.G.L. c. 131, Section 40, the Wetlands Protection Act or the Arlington Wetlands Bylaw. For example the Applicant may use different colors or line symbols to delineate different RAs.
- (3) Alterations.
  - (a) Drawing must include a delineation of all alterations proposed in or adjacent to all Resource Areas as indicated below:
    - i. Areas to be dredged;
    - ii. Areas to be filled;
    - iii. Areas to be altered in any other way;
  - (b) All alterations should be clearly explained in text or footnotes.
- (4) All drawings shall show the distance twenty-five (25), fifty (50) and one-hundred feet from the resource areas listed in Section 2.A(1) through (3) as well as the Riverfront Area
- (5) Calendar dates of measurements, samplings, contours and so forth should appear with such data. Datum shall be stated in NAVD 88 base. The contour interval shall be no greater than two feet.
- (6) Indicate existing and final contours and contour interval used, including pond bottom and stream invert contours.
- (7) Indicate locations and elevations of sills and bottom of foundation(s) and septic system(s) (if any).
- (8) Indicate soil characteristics in representative parts of property, including depth of peat and muck in wetlands.
- (9) Indicate locations, sizes and slopes of existing and proposed culverts and pipes.
- (10) Include cross-section of all wetlands, showing slopes, bank and bottom treatments for wetland creation or replication.
- (11) For projects in land subject to flooding, include existing and proposed water storage capacity of the property, including calculations and data on which the capacity is based. If filling is proposed, determine the effect of loss of storage on downstream channels and culverts.
- (12) Indicate location and elevation of bench mark used for survey.
- (13) Indicate existing trees, stone walls, fences, buildings, historic sites, rock ridges and outcroppings.
- (14) Indicate invert elevations on catch basins.
- (15) Indicate proposed on-site pollution control devices, such as hooded catch basins, oil absorption pillows, detention/retention basins, flow dissipaters or vegetative buffers.
- (16) Show locations/details of erosion control devices.
- (17) Assessors Map and Lot number(s) shall be shown.
- (18) If location is within an Area of Critical Environmental Concern, it shall be so indicated on the plan.
- D. The Commission reserves the right to administer the requirements of this section in its sole discretion commensurate with the nature, scope, type, and cost of the proposed project or activity.

## Section 14 - Area to be Staked Prior to Site Inspection

- A. Before site inspections can be made by the Conservation Commission or the Commission's agent, the following conditions must be met:
  - (1) Stakes shall be provided as follows:
    - (a) Stakes indicating the corners of houses or other structures nearest the wetland resource area.
    - (b) Stakes indicating the septic tank and the leaching field location.
    - (c) Stakes indicating the limit of work.
  - (2) Lot number or house number should be posted at location.
  - (3) Edges of all resource areas shall be delineated. (Please refer to rules and regulations for definitions.)
  - (4) Directions shall be made available to the Commission to locate property.
- B. Failure to have the lot staked may result in no review and thus delay of a project.
- C. Upon completion of staking, the Conservation Commission shall be notified and a site inspection shall be arranged.
- D. The requirements of this section shall be met commensurate with the nature, scope, type, and cost of the proposed project or activity.

## **Section 15 - Public Hearings**

A. A public hearing shall be held by the Conservation Commission with 21 days of receipt of the complete Notice of Intent, and shall be advertised by the Commission at the applicant's expense in accordance with the Bylaw (Section 5) and the requirements of the Open Meeting Law, M.G.L. c. 30A, Sections 18-25. Abutter notification as detailed above shall be done by and at the expense of the applicant at the time of filing the Request for Determination of Applicability, Abbreviated Notice of Resource Area Delineation, Abbreviated Notice of Intent or Notice of Intent.

- B. Continued hearings.
  - (1) Public hearings may be continued as follows:
    - (a) Without the consent of the applicant to a date certain announced at the hearing should the applicant or the applicant's representative fail to provide at least ten (10) calendar days prior to that scheduled meeting/hearing sufficient abutter notification, newspaper notification, an electronic copy or a sufficient number of paper copies specified by the Conservation Agent of any written information or documents intended for discussion at a meeting/hearing, or fail to provide to the Commission office or Agent envelopes with sufficient first-class postage, prepaid, for mailing of such copies to Commission members.

- (b) Without the consent of the applicant to a certain date announced at the hearing either for receipt of additional information offered by the applicant or others or for information required of the applicant deemed necessary by the Conservation Commission at its discretion; or
- (c) With the consent of the applicant, to an agreed-upon date, which shall be announced at the hearing.
- (d) Without the consent of the applicant, for lack of receipt of the DEP file number, to certain date announced at the hearing; or
- (e) Without the consent of the applicant, for failure to pay the Consultant Fee pursuant to Section 11 of the Bylaw or pursuant to G.L. Ch. 44, § 53G, to a date certain announced at the hearing.
- (f) Without the consent of the applicant, for failure to pay the filing fee pursuant to Section 11 of the Bylaw, to a date certain announced at the hearing.
- (2) The date, time and place of any such continued hearing shall be publicized in accordance with the Open Meeting Law, and notice shall be sent by the applicant to any person at the hearing who so requests.

#### **Section 16 - Issuance of Permit**

A. Within 21 days of the close of the public hearing or any continuance thereof on an application/Notice of Intent for a permit, the Conservation Commission shall:

- (1) Make a determination that the area on which the work is proposed to be done, or on which the proposed work will remove, fill, dredge, discharge into, build upon, degrade or otherwise alter, is not significant to any of the interests identified in the Bylaw, and shall so notify the applicant;
- (2) Make a determination that the area on which the work is proposed to be done, or on which the proposed work will remove, fill, dredge or alter, is significant to one or more of the interests identified in the Bylaw and issue a permit for the protection of said interests;
- (3) Make a determination that the proposed work fails to meet the design specifications, performance standards, or other requirements of the Bylaw, its regulations, or policies of the Commission, or that the project fails to avoid or prevent unacceptable significant or cumulative effects upon the resource area values of the Bylaw, or that there are no conditions adequate to protect said values; or
- (4) If the Conservation Commission finds that the information submitted by the applicant is not sufficient to describe the site, the work, or the effect of the work on the interests identified in the Bylaw, it may issue a permit denial. The permit shall specify the information which is lacking and why such information is necessary. If the Commission issues a permit denial, no work may occur until an applicant reapplies and the Commission grants a permit allowing work.
- B. A permit allowing the proposed work shall impose such conditions, in the judgment of the Conservation Commission, that are necessary for the protection of those areas found to be significant to one or more of the interests identified in the Bylaw. Such a condition may include,

but are not limited to the placement of permanent bounds (granite or metal) to demarcate all or part of a resource area or mitigation area. Said permit shall prohibit any work or any portion thereof that cannot be conditioned to meet said standards. The permit shall impose conditions setting limits on the quantity and quality of discharge from a point source (both open and closed channel) when said limits are necessary to protect the interests identified in the Bylaw.

- C. The permit shall be valid for three years from the date of its issuance.
- D. The permit shall be signed and issued by the Conservation Commission and shall be mailed or hand-delivered to the applicant, his or her agent or attorney.
- E. A copy of the plans describing the work and the permit shall be kept on file by the Conservation Commission and shall be available to the public at reasonable hours.
- F. Prior to the commencement of any work permitted or required by the permit, the permit shall be recorded in the Registry of Deeds or the Land Court. In the case of recorded land, the permit shall also be noted in the Registry's Grantor Index under the name of the owner of land upon which the proposed work is to be done. In the case of registered land, the permit shall also be noted on the Land Court Certificate of Title of the owner of the land upon which the proposed work is to be done. Certification of recording shall be sent to the Conservation Commission within two weeks of recording. If work is undertaken without the applicant first recording the permit, the Conservation Commission may issue an enforcement order.

#### **Section 17 - Extension of Permit**

A. The Conservation Commission may extend a permit for a period of up to an additional three-year period from date of issuance. No permit may be extended for more than six years after date first issued. The request for an extension shall be made to the Conservation Commission at least 30 days prior to the expiration of the permit. The Commission shall hold a public hearing in accordance with the Bylaw and these regulations within 30 days of receipt of said request. Should said public hearing be continued past the date of the expiration of the permit, the expiration date shall be stayed to the date on which the Commission votes on whether to extend the permit, should the Commission vote not to grant the request for permit extension.

- B. The Conservation Commission may deny the request for an extension and require the filing of a new application for permit for the remaining work in the following circumstances:
  - (1) Where no work has begun on the project, except where such failure is due to an unavoidable delay, such as appeals and in the obtaining of other necessary permits;
  - (2) Where new information, not available at the time the permit was issued, has become available and indicates that the permit is not adequate to protect the resource area values identified in the Bylaw:
  - (3) Where incomplete work is causing damage to the resource area values identified in the Bylaw;
  - (4) Where work has been done in violation of the permit or the Bylaw or these regulations; or
  - (5) Where resource areas have changed.

C. If issued by the Conservation Commission, the extension permit shall be signed by a majority of the quorum of the members of the Conservation Commission present.

D. The extension permit shall be recorded in the Land Court or the Registry of Deeds, whichever is appropriate. If work is undertaken without the applicant recording the extension permit, the Conservation Commission may issue an enforcement order or may itself record the extension permit.

#### Section 18 – Minor Amendment of Permit

A. In the event a permittee seeks to make a minor modification to an existing permit or other Commission determination, any such requested modification shall have the same or less impact on the resource area values protected by the Bylaw as the approved work. Requests for minor amendment shall follow the procedure described below. No amended permit shall be issued for a permit that has expired.

#### B. Procedure:

- (1) An applicant shall make a request for an amendment to the Conservation Commission. The request shall be either orally at a regularly scheduled meeting of the Commission or by submitting the request to the Commission in writing, which such request shall be discussed at a regularly scheduled meeting. The request shall describe what changes have been proposed and present any pertinent plans showing such changes.
- (2) The Conservation Commission first shall determine whether the requested change warrants the filing of a new Notice of Intent or whether it is of a sufficiently minor nature and can be considered as an amendment to the original Final Order of Conditions. The Conservation Commission may in its sole and unreviewable discretion determine the project change is relatively minor only if:
  - (a) the purpose of the project has not changed,
  - (b) the scope of the project has not increased,
  - (c) the project still meets relevant standards in these regulations,
  - (d) resource areas are still protected, and
  - (e) the potential for adverse impacts to resource area values will not be increased.

If the Conservation Commission determines the proposed change(s) is not minor, then it shall not issue an amendment, but instead require the filing of a new Notice of Intent/application for permit if the permittee intends to continue to pursue the modification.

Ministerial correction of obvious mistakes, such as citing a wrong file number or typographical errors, may be accomplished by correction of the permit by the Commission or the Conservation Agent.

- (3) If the Conservation Commission determines that a new Notice of Intent is not necessary, the applicant shall at its expense publish newspaper notice of the proposed amendment in accordance with the Bylaw (Section 5). Abutter notification of the proposed amendment shall also be done by and at the expense of the applicant at the time. The notice must describe that an amendment to an Order/permit is being requested, that the request is pending before the Commission for review, the date of the public hearing at which the Commission will consider the request for amendment, and where a copy of the application for the requested change may be obtained. The Conservation Commission shall provide notice of the public hearing in accordance with the requirements of the Open Meeting Law, M.G.L. c. 30A, Sections 18 25.
- (4) Under no circumstances will the issuance of an Amended Order of Conditions extend the effective date of the original Final Order of Conditions. The Amended Order shall run with the term of the original Order of Conditions or the effective date of an extended Order of Conditions.
- (5) The Amended Order should be issued on the form provided for an Order of Conditions/Permit, with the insertion of the word "Amended" and the amendment date. Amended Orders/Permit must be recorded with the registry of Deeds in the same manner as Orders.

## **Section 19 - Certificate of Compliance**

- A. Upon written request by the applicant, a certificate of compliance shall be issued by the Conservation Commission within 21 days of receipt thereof, and shall certify if it so determines, that the activity or portions thereof described in the application for permit and plans has been completed in compliance with the permit and any amendment(s) thereto. If approved by the Conservation Commission, the certificate of compliance shall be signed and issued by the Commission.
- B. Prior to the issuance of a certificate of compliance, a site inspection shall be made by the Conservation Commission or its agent, in the presence of the applicant or the applicant's agent if applicant so desires.
- C. If the Conservation Commission determines, after review and inspection, that the work has not been done in compliance with the permit, it shall refuse to issue a certificate of compliance. Such refusal shall be issued within 21 days of receipt of a request for a certificate of compliance, shall be in writing, and shall specify the reasons for denial.
- D. If a project has been completed in accordance with plans stamped by a registered professional engineer or a land surveyor or a registered landscape architect for landscaping projects, a written statement by such a professional person certifying substantial compliance with the plans and setting forth what deviation, if any, exists from the plans approved in the permit shall accompany the request for a certificate of compliance. The Commission reserves the right to administer the

requirements of this paragraph in its sole discretion commensurate with the nature, scope, type, and cost of the proposed project or activity.

E. If the permit contains conditions which continue past the completion of the work, such as maintenance or monitoring, the certificate of compliance shall specify which, if any, of such conditions shall continue. The certificate shall also specify to what portion of the work it applies, if it does not apply to all the work regulated by the permit.

F. The certificate of compliance shall be recorded in the Land Court or Registry of Deeds, whichever is appropriate. Certification of recording shall be sent to the Conservation Commission on the form specified by the Commission.

#### **Section 20 – Prohibited Materials**

The Commission has determined that the following materials are harmful to the resource area values of the Bylaw and therefore are prohibited in resource areas:

- A. Copper pipes on the exterior of any structure.
- B. Coal-tar based sealant (asphalt-emulsion based sealant is allowed).
- C. Synthetic components of artificial athletic fields

#### **Section 21 - Banks**

#### A. Findings.

- (1) Banks are likely to be significant to wildlife, to plant or wildlife habitat, to public or private water supply, to groundwater supply, to flood control, to storm damage prevention, to the prevention of pollution, to erosion control and sedimentation control, and to the protection of fisheries. Where banks are composed of concrete, asphalt or other artificial impervious material, said banks are likely to be significant to flood control and storm damage prevention.
- (2) Banks are areas where groundwater discharges to the surface and where, under some circumstances, surface water recharges the groundwater.
- (3) Where banks are partially or totally vegetated, the vegetation serves to maintain their stability, which in turn protects water quality by reducing erosion and siltation. Partially or totally vegetated banks provide habitat for wildlife.
- (4) Banks may also provide shade that moderates water temperatures, as well as providing breeding habitat and escape cover and food, all of which are significant to the protection of fisheries. Banks which drop off quickly or overhang the water's edge often contain numerous undercuts which are favorite hiding spots for important species.
- (5) Banks act to confine floodwater during the most frequent storms, preventing the spread of water to adjacent land. Because banks confine water during such storms to an established channel, they maintain water temperatures and depths necessary for the protection of fisheries. The maintenance of cool water temperatures during warm weather is critical to the survival of many species. An alteration of a bank that permits water to frequently and

- consistently spread over a larger and more shallow area increases the amount of property which is routinely flooded, as well as elevating water temperatures and reducing fish habitat within the main channel, particularly during warm weather.
- (6) Land bordering or within 100 feet of a bank is likely to be significant to the protection and maintenance of the bank, and therefore to the protection of the interests which these resources serve to protect.
- B. Definition, critical characteristics and boundary.
  - (1) A bank is the portion of the land surface which normally abuts and confines a water body. It occurs between a water body and a vegetated bordering wetland and adjacent floodplain, or, in the absence of these, it occurs between a water body and an upland. A bank may be partially or totally vegetated, or it may be comprised of exposed soil, gravel or stone.
  - (2) The physical characteristics of a bank, as well as its location, as described in the foregoing Subsection B(1), are critical to the protection of the interests specified in Subsection A.
  - (3) The upper boundary of a bank is the first observable break in the slope or the mean annual flood level, whichever is higher in elevation. The lower boundary of a bank is the mean annual low flow level or mean low water level.
- C. No activity, other than the maintenance of an already existing structure or Resource Area Enhancement, shall be allowed which will result in the building within or upon, removing, filling, or altering of a bank.
- D. Any activity which is allowed under this section on a bank or on land bordering or within 100 feet of a bank shall not impair the following:
  - (1) The physical stability of the bank.
  - (2) The water-carrying capacity of the existing channel within the bank.
  - (3) Groundwater and surface water quality.
  - (4) The capacity of the bank to provide breeding habitat, escape cover and food for fisheries.
- E. No work shall be performed within 50 feet of an inland bank that abuts an estimated habitat area as designated on the most current map prepared by the Massachusetts Natural Heritage and Endangered Species Program.

# Section 22 - Vegetated Wetlands (Wet Meadows, Marshes, Swamps, and Bogs)

#### A. Findings.

(1) Vegetated Wetlands are likely to be significant to wildlife, to plant or wildlife habitat, to public or private water supply, to groundwater supply, to flood control, to storm damage prevention, to prevention of pollution, and to the protection of fisheries. In these ways, vegetated wetlands are important in mitigating the negative impacts of climate change.

- (2) The plant communities, soils and associated low, often flat topography of vegetated wetlands remove or detain sediments, nutrients (such as nitrogen and phosphorous) and toxic substances (such as heavy metal compounds) that occur in runoff and floodwaters.
- (3) Some nutrients and toxic substances are detained for years in plant root systems or in the soils. Others are held by plants during the growing season and released as the plants decay in the fall and winter. This latter phenomenon delays the impacts of nutrients and toxins until the cold weather period, when such impacts are less likely to reduce water quality.
- (4) Vegetated Wetlands are areas where groundwater discharges to the surface and where, under some circumstances, surface water discharges to the groundwater.
- (5) The profusion of vegetation and the low, flat topography of Vegetated Wetlands slow down and reduce the passage of floodwaters during periods of peak flow by providing temporary floodwater storage, and by facilitating water removal through evaporation and transpiration. This reduces downstream flood crests and resulting damage to private and public property. During dry periods the water retained in Vegetated Wetlands is essential to the maintenance of base flow levels in rivers and streams, which in turn is important to the protection of water quality and water supplies.
- (6) Wetland vegetation provided shade that moderates water temperatures important to fish life. Wetlands flooded by adjacent water bodies and waterways provide food, breeding habitat and cover for fish. Fish populations in the larval stage are particularly dependent upon food provided by overbank flooding which occurs during peak flow periods (extreme storms), because most river and stream channels do not provide quantities of the microscopic plant and animal life required.
- (7) Wetland vegetation supports a wide variety of insects, reptiles, amphibians, mammals and birds which are a source of food for important fish. Bluegills (*Lepomis macrochirus*), pumpkinseeds (*Lepomis gibbosus*), yellow perch (*Percs flavenscens*), rock bass (*Ambloplites rupestris*) and all trout species feed upon nonaquatic insects, Largemouth bass (*Micropterus salmoides*), chain pickerel (*Esox niger*) and northern pike (*Esox lucius*) that feed upon small mammals, snakes, nonaquatic insects, birds and amphibians. These wetlands are also important to the protection of rare and endangered wildlife species.
- (8) Vegetated Wetlands, together with land bordering or within 100 feet of a vegetated wetland, serve to moderate and alleviate thermal shock and pollution resulting from runoff from impervious surfaces which may be detrimental to wildlife, and fisheries downstream of the vegetated wetlands.
- (9) Land bordering or within 100 feet of a Vegetated Wetland is likely to be significant to the protection and maintenance of Vegetated Wetlands, and therefore to the protection of the interests which these resource areas serve to protect.
- B. Definition, critical characteristics and boundary.
  - (1)Vegetated Wetlands are freshwater wetlands, including both Bordering Vegetated Wetlands (i.e., bordering on freshwater bodies such as on creeks, rivers, streams, ponds and lakes), and Isolated Vegetated Wetlands which do not border on any permanent water body. The types of freshwater wetlands are wet meadows, marshes, swamps, bogs and vernal pools. Vegetated Wetlands are areas where soils are saturated and/or inundated such that they support a predominance of wetland indicator plants. The ground water and surface water hydrological regime, soils and the vegetational community which occur in

- each type of freshwater wetlands, including both bordering and isolated vegetated wetlands, are defined under the Bylaw based on G.L. c. 131, § 40.
- (2) The boundary of Vegetated Wetland, whether Bordering or Isolated, is the line within which 50% or more of the vegetational community consists of wetland indicator plants and saturated or inundated conditions exist. Wetland indicator plants shall include but not necessarily be limited to those plant species identified in the Act.
- (3) The boundary shall be defined or delineated by the following:
  - (a) Areas containing a predominance of wetland indicator plants are presumed to indicate the presence of saturated or inundated conditions. Therefore, the boundary as determined by 50% or more wetland indicator plants shall be presumed accurate when:
    - 1. All dominant species have an indicator status or of obligate, facultative wetland+, facultative wetland, or facultative wetland- and the slope is distinct or abrupt between the upland plant community and the wetland plant community; or
    - 2. The Conservation Commission determines that sole reliance on wetland indicator plants will yield an accurate delineation.
  - (b) When the boundary is not presumed accurate as described in (3)(a)(1.-2.) or to overcome the presumption, credible evidence shall be submitted by a competent source demonstrating that the boundary of Vegetated Wetlands is the line within which 50% or more of the vegetational community consists of wetland indicator plants and saturated or inundated conditions exist. The Conservation Commission must evaluate vegetation and indicators of saturated or inundated conditions if submitted by a credible source, or may require credible evidence of saturated or inundated conditions sufficient to support wetland indicator plants, which shall include one or more of the following:
    - Groundwater, including the capillary fringe, within a major portion of the root zone;
    - 2. Observation of prolonged or frequent flowing or standing surface water;
    - 3. Characteristics of hydric soils.
  - (c) Where an area has been disturbed (e.g., by cutting, filling, or cultivation), the boundary is the line within which there are indicators of saturated or inundated conditions sufficient to support a predominance of wetland indicator plants, a predominance of wetland indicator plants, or credible evidence from a competent source that the area supported, or would support under undisturbed conditions, a predominance of wetland indicator plants prior to the disturbance or characteristic of hydric soils.
- C. No activity, other than the maintenance of an already existing structure or Resource Area Enhancement, which will result in the building within or upon, removing, filling or altering of a Vegetated Wetland shall be permitted by the Conservation Commission.
- D. No work shall be performed within 50 feet of a Vegetated Wetland that abuts on an estimated habitat area as designated on the most current map prepared by the Massachusetts Natural Heritage and Endangered Species.

#### E. Wetland Replication

- (1) Introduction. Notwithstanding the foregoing subsections C. and D., the Commission in its sole discretion may allow work in Vegetated Wetland which results in the loss of up to 5,000 square feet of Vegetated Wetland when such area is replaced in a manner to ensure that the replacement area will provide a viable wetland that replaces the functions and values of the area lost. Detailed project design is required to guarantee that wetland impacts are avoided to the maximum extent possible, to minimize absolutely necessary impacts and lastly, to successfully replicate losses that cannot be avoided. The design of replication areas shall carefully consider and incorporate to the extent practicable the Massachusetts Inland Wetland Replication Guidelines (DEP, 2002). Restoration of a degraded wetland may be accepted by the Commission as satisfying the foregoing replication requirement.
- (2) Required design criteria. Projects involving Wetlands Filling and/or permanent Alterations shall meet the requirements of 310 C.M.R. 10.60(3) and 310 C.M.R. 10.55(4) and the following requirements of the Commission:
  - (a) The proposed replication area design must be submitted to the Commission for approval as part of the submittal of the project Notice of Intent.
  - (b) The replication area must be shown to sufficiently duplicate the functions and values of the wetland proposed to be altered.
  - (c) The area of the wetland replication shall be at a 2:1 ratio to that area of wetland loss.
  - (d) The type of wetland created shall be similar to that lost in terms of physiology and function (e.g., similar plant species, hydrologic regime, and soils) except where an improvement in physiology and function is proposed. The applicant will take into consideration the impacts of climate change on the replication of the wetland, especially in terms of mitigation of extreme heat, resilience to increased/extreme storm events vents, and changes in precipitation.
  - (e) The replication area must have similar groundwater and surface elevation as the lost area.
  - (f) The replication area must have a similar location relative to the bank as the lost area when replicating bordering vegetated wetland.
  - (g) The replication area must have an unrestricted surface hydraulic connection to the same waterbody or waterway as the lost area when replicating bordering vegetated wetland.
  - (h) The location of the replication areas must be in the same general area as the lost wetland. The location of replacement wetland areas shall be in the following order of preference: 1) on site, 2) within the same watershed as the lost area, or 3) within the Town of Arlington.

- (i) The replication area shall be constructed prior to alteration of the existing wetland and during the same growing season. When replication involves transplanting plants and materials from existing wetland to the replicated wetland, the replication area shall be constructed, to the extent possible, immediately after alteration of the existing wetland. When transporting, all care shall be taken to prevent the transporting of invasive plants and invasive materials in soils.
- (j) The proposed replication area must be clearly flagged for Commission site inspection before the Notice of Intent filing.
- (k) The proposal for a replication area (submitted with the Notice of Intent) shall include a detailed plan of the wetland replication showing:
  - Cross-section with indication of groundwater level, soil profile and thickness of organic soil in the existing and proposed wetlands;
  - (ii) Plant species detail, including number, type and location of species found in the replication area to be altered, and number, types and locations of species to be introduced into the replacement area;
  - (iii) Detail of stabilization plans for replication area of Banks;
  - (iv) Wildlife Habitat diversity plan; and
  - (v) Any trees over 2" dbh shall be replaced in accordance with Section 24 of these Regulations, "Vegetation Removal and Replacement".
- (1) If, after three growing seasons, the Commission determines that the replication area has not satisfactorily developed into a wetland replacing the wetland area lost, the applicant or owner may be required to submit new plans to successfully replicate said lost wetland. No Certificate of Compliance shall be issued until the Commission has determined that a satisfactory replication area has been completed at the end of three growing seasons.

## Section 23 - Land Under Water Bodies (Under Any Stream, Pond or Lake)

#### A. Findings.

- (1) Land Under Water Bodies and Waterways is likely to be significant to wildlife, to public and private water supply, to groundwater supply, to flood control, to storm damage prevention, to prevention of pollution and to the protection of fisheries.
- (2) Where Land Under Water Bodies and Waterways is composed of pervious material, such land represents a point of exchange between surface water and groundwater.
- (3) The physical nature of Land Under Water Bodies and Waterways is highly variable, ranging from deep organic soils and fine sedimentary deposits to rocks and bedrock. The organic soils and sediments play an important role in the process of detaining and removing dissolved and particulate nutrients (such as nitrogen and phosphorous) from the surface water above. They also serve as traps for toxic substances (such as heavy metal compounds).
- (4) Land Under Water Bodies and Waterways, in conjunction with banks, serves to confine floodwater within definite channel during the most frequent storms. Filling within this

- channel blocks flows which in turn causes backwater and overbank flooding during such storms. An alteration of Land Under Water Bodies and Waterways that causes water to frequently spread out over a larger area at a lower depth increases the amount of property which is routinely flooded. Additionally, such alteration results in an elevation of water temperature and a decrease in habitat in the main channel, both of which are detrimental to fisheries, particularly during periods of warm weather and low flows.
- (5) Land under rivers, streams and creeks that is composed of gravel allows the circulation of cold, well-oxygenated water necessary for the survival of fish species. River, stream and creek bottoms with a diverse structure composed of gravel, large and small boulders and rock outcrops provide escape cover and resting areas for fish species. Such bottom type also provides areas for the production of aquatic insects essential to fisheries.
- (6) Land under ponds and lakes is vital to a large assortment of warm-water fish during spawning periods. Species such as largemouth bass (*Micropterus salmoides*), smallmouth bass (*Micropterus dolomieui*), blue gills (*Lepomis marcrochirus*) pumpkinseeds (*Lepomis gibbosus*), black crappie (*Promoxis nigromaculatus*) and rock bass (*Ambloplites rupestris*) build nests on the lake and bottom substrates within which they shed and fertilize their eggs.
- (7) Land within 100 feet of any Bank abutting Land Under Water Bodies is likely to be significant to the protection and maintenance of land under a water body, and therefore to the protection of the interests which these water bodies serve to protect.
- B. Definition, critical characteristics and boundaries.
  - (1) Land Under Water Bodies is the land beneath any creek, river, stream, pond or lake. Said land may be composed of organic muck or peat, fine sediments, rocks or bedrock.
  - (2) The physical characteristics and location of Land Under Water Bodies and Waterways specified in the foregoing Subsection B(1) are critical to the protection of the interests specified in Subsection A above.
  - (3) The boundary of Land Under Water Bodies is mean low water level.
- C. No activity, other than the maintenance of an already existing structure or Resource Area enhancement, which will result in the building within or upon, or removing, filling, dredging or altering of Land Under a Water Body or within 25 feet of Land Under a Water Body shall be done without written permission of the Commission.
- D. The Commission may allow activity on Land Under a Water Body or within 100 feet of Land Under a Water Body only if it will not impair the following:
  - (1) The water-carrying capacity within the defined channel, which is provided by said land in conjunction with the banks.
  - (2) Ground and surface water quality and quantity.
  - (3) The capacity of said land to provide breeding habitat, escape cover or food for fisheries.
- E. No work shall be performed within 50 feet of Land Under Water Bodies that abuts an estimated habitat area as designated on the most current map prepared by the Massachusetts Natural Heritage and Endangered Species Program.

## **Section 24 - Land Subject to Flooding (Bordering and Isolated)**

#### A. Findings.

- (1) Bordering Land Subject to Flooding.
  - (a) Bordering Land Subject to Flooding is an area which floods from a rise in a bordering waterway or water body. Such areas are presumed to be significant to flood control and storm damage prevention and protection of surrounding land and other homes or buildings. In these ways, Bordering Land Subject to Flooding is important in mitigating the negative impacts of climate change.
  - (b) Bordering Land Subject to Flooding provides a temporary storage area for floodwater which has overtopped the bank of the main channel of a creek, brook, river or stream or the basin of a pond or lake. During periods of peak runoff, floodwaters are both retained (i.e., slowly released through evaporation and percolation) and detained (slowly released through surface discharge) by Bordering Land Subject to Flooding. Over time, incremental filling of these areas causes increases in the extent and level of flooding by eliminating flood storage volume or by restricting flows, thereby causing increases in damage to public and private properties and downstream resource areas.
  - (c) The hydrologic regime, plant community and structure, topography, soil, and proximity to water bodies or vegetated wetlands provide important food, shelter, migratory, and overwintering areas, and breeding for wildlife.
  - (d) The hydrologic regime, surrounding plant community, topography, soil, and proximity to water bodies or vegetated wetlands allow vegetation to successfully grow in these areas.
  - (e) The Commission has found that new parking areas in Bordering Land Subject to Flooding may result in a significant or cumulative effect upon the resource area values protected by the Bylaw, and has found that these facilities can result in the uncontrolled acute or chronic release of these harmful materials into the resource areas protected by the Bylaw. The Commission has also found that using these structures for flood storage likely will result in the damage of vehicles and property under flooding conditions.
- (2) Isolated Land Subject to Flooding.
  - (a) Isolated Land Subject to Flooding is an isolated depression or a closed basin which serves as a ponding area for runoff or high groundwater which has risen above the ground surface. Such areas are likely to be locally significant to flood control and storm damage prevention. In this way, Isolated Land Subject to Flooding is important in mitigating the impacts of climate change. In addition, where such areas are underlain by pervious material they are likely to be significant to public or private water supply and to groundwater supply. Where such areas are underlain by pervious material covered by a mat or organic peat and muck, they are also likely to be significant to the prevention of pollution. Isolated Land Subject to Flooding provides important breeding habitat for amphibians and some rare plants. Isolated Land Subject to Flooding provides a temporary storage area where runoff and high groundwater pond and slowly evaporate or percolate into the substrate. Filling causes

- lateral displacement of the ponded water onto contiguous properties, which may result in damage to said properties.
- (b) Isolated Land Subject to Flooding, where it is underlain by pervious material, provides a point of exchange between groundwater and surface waters. Contaminants introduced into said area, such as road salts, find easy access into the groundwater. Where these conditions occur and a mat of organic peat or muck covers the substrate of the area, said mat serves to detain and remove contaminants which might otherwise enter the groundwater.
- (c) The Commission has found that new parking areas in Isolated Land Subject to Flooding may result in a significant or cumulative effect upon the resource area values protected by the Bylaw, and has found that these facilities can result in the uncontrolled acute or chronic release of these harmful materials into the resource areas protected by the Bylaw. The Commission has also found that using these structures for flood storage can result in the damage of vehicles and property under flooding conditions.

#### B. Definitions, critical characteristics and boundaries.

- (1) Bordering Land Subject to Flooding.
  - (a) Bordering Land Subject to Flooding is an area with low, generally flat topography adjacent to and inundated by floodwaters rising from brooks, creeks, rivers, streams, pond or lakes. It extends from the banks of these waterways and water bodies; where a bordering vegetated wetland occurs, it extends from said wetland.
  - (b) The topography and location of Bordering Land Subject to Flooding specified in the foregoing Subsection B(1)(a) are critical to the protection of the interests specified in subsection A(1) above.
  - (c) The boundary of Bordering Land Subject to Flooding is the estimated or observed maximum lateral extent of floodwater which will theoretically result or has resulted from the statistical 1%-annual-chance flood (also known as the one-hundred-yearfrequency storm).
    - Said boundary shall be that determined by reference to the most recently available flood profile data prepared for the Town of Arlington within which the work is proposed under the Federal Emergency Management Agency's National Flood Insurance Program (NFIP). Said boundary, so determined, shall be presumed accurate. This presumption may be overcome only by credible evidence from a registered professional engineer or other professional competent in such matters.
    - 2. Notwithstanding the foregoing, where NFIP profile data is unavailable or is determined by the Commission to be outdated, inaccurate or not reflecting current conditions, the boundary of Bordering Land Subject to Flooding shall be the maximum lateral extent of floodwater which has been observed or recorded or the Commission may require the applicant to determine the boundary of Bordering Land Subject to Flooding by engineering calculations which shall be:
      - i. Based upon NOAA Atlas 14, Volume 10 (latest version) "NOAA Plus"; "NOAA Plus" is the NOAA Precipitation Frequency estimates at the upper bound of the 90% confidence level. It is calculated by multiplying the NOAA Upper Confidence for the 100-year 24-hour design storm by 0.9. (Example: if NOAA 100-year 24 hour design storm is 8.16 inches and the upper bound of

- the 90% confidence interval is 11.5 inches, NOAA Plus would be  $11.5 \times 0.9 = 10.35$  inches for the 100-year 24-hour design storm).
- Based upon the standard methodologies set forth in U.S. Soil Conservation Service Technical Release No. 55, Urban Hydrology for Small Watersheds and Section 4 of the U.S. Soil Conservation Service, National Engineering Hydrology Handbook; and
- iii. Prepared by a registered professional engineer or other professional competent in such matters.
- (2) Isolated Land Subject to Flooding.
  - (a) Isolated Land Subject to Flooding is an isolated depression or closed basin without an inlet or an outlet. It is an area which at least once a year confines standing water to an average depth of at least six inches and has a surface area of 1,000 square feet or greater. Isolated Land Subject to Flooding may be underlain by pervious material, which in turn may be covered by a mat of peat or muck.
  - (b) The characteristics specified in the foregoing Subsection B(2)(a) are critical to the protection of the interests specified in Subsection A(2) above.
  - (c) The boundary of Isolated Land Subject to Flooding is the perimeter of the largest observed or recorded volume of water confined in said area.

C. No activity, other than the maintenance of an already existing structure which will result in the building within or upon, or removing, filling, dredging or altering of Land Subject to Flooding shall be conducted without written permission of the Conservation Commission.

Any proposed activity within Bordering Land Subject to Flooding shall also be governed by all regulations of the Floodplain District of the Arlington Zoning Bylaw, the Town of Arlington Stormwater Bylaw and regulations, the State Wetlands Protection Act (G.L. c. 131, sec. 40), the state Wetlands Regulations (310 CMR 10.00), and the State Building Code (780 CMR).

- D. The Commission may permit activity on Land Subject to Flooding provided it shall not result in the following:
  - (1) Flood damage due to filling which causes lateral displacement of water that would otherwise be confined within said area;
  - (2) Adverse effect on surface or groundwater, where said area is underlain by pervious material;
  - (3) An adverse effect on the capacity of said area to prevent pollution of the groundwater, where the area is underlain by pervious material which in turn is covered by a mat of organic peat and muck.
  - (4) A rise in the base flood elevation anywhere in the floodplain. This must be demonstrated through hydrologic and hydraulic analysis performed in accordance with standard engineering practice performed by a registered professional.
  - (5) Reduction in the ability of the land to buffer more inland areas from flooding.
  - (6) Compensatory flood storage shall be provided at a 2:1 ratio, minimum, for each unit volume of flood storage lost at each elevation for any project that disrupts more than 10 cubic feet of floodplain. For projects that disrupt less than 10 cubic feet, compensatory flood storage shall be provided at a1:1 ratio at each elevation.

Any such activity shall provide compensatory flood storage for all flood storage volume that will be lost at each elevation. Compensatory flood storage shall be at a 2:1 ratio, minimum, for each unit volume of flood storage lost at each elevation. Compensatory flood storage shall mean a volume not previously used for flood storage, shall have an unrestricted hydraulic connection to the same waterway or water body, and, with respect to waterways, shall be provided within the same reach of the river, stream, or creek. Work within Bordering Land Subject to Flooding, including that work required to provide the above specified compensatory storage, shall not restrict flows so as to cause an increase in flood stage or velocity. No new parking areas or garages shall be used as compensatory flood storage.

E. The applicant shall take into consideration the impacts of climate change on the activities proposed on land subject to flooding, especially in terms of the compensatory flood storage as a climate change resilience strategy.

F. No work shall be performed within 50 feet of land subject to flooding that abuts an estimated habitat area as designated on the most current map prepared by the Massachusetts Natural Heritage and Endangered Species Program unless the Applicant can demonstrate by a preponderance of credible evidence that the work will not have any short term or long term adverse effect on the resource area values protected by the Bylaw.

#### Section 25 - Vegetation Removal and Replacement

A. Findings: Vegetation in a resource area protected by the Bylaw is significant for wildlife, wildlife habitat and water quality. In addition, vegetation helps to control flood and storm damage, and trees provide carbon sequestration and shade to offset heat-island effects, thereby mitigating potential impacts of climate change when their replacement is equal to or greater than the loss. Vegetation provides food, shelter, shade, sediment control, bank stabilization, biodiversity, pollutant uptake, evapotranspiration, and aesthetics. In addition, plant size ordinarily is proportional to habitat value; i.e., large wooded trees are of greatest habitat value, followed by bushes, and then ground cover.

B. No vegetation in a resource area protected by the Bylaw shall be damaged, extensively pruned, or removed without written approval by the Commission, and in-kind replacement shall be provided according to Commission requirements. Extensive pruning is defined as removal of more than 20% of the crown and/or limbs. For extensive pruning or removal of vegetation because of an Imminent Risk to Public Health and Safety, in-kind replacement shall be to the extent practicable as determined by the Commission (See Section 10 of these Regulations for Emergency Certification).

C. "In-kind replacement" means planting the same type of plant species (if native) that was removed, extensively pruned, or damaged, of sizes and quantities as specified in Section 25.E.5, unless compelling evidence is presented in writing that explains why the resource area values under the Bylaw are promoted through an alternative proposal. An in-kind replacement should occur within the same resource area or another resource area located in close proximity on the project site. Only native, non-invasive plant species shall be planted as replacements. An "in-

Comment [ES6]: Pollinator section?

kind replacement" shall consider a combination of species type, size, and surface area as measured by the drip line of the impacted plant(s) or the diameter at breast height (dbh) for trees.

- D. In administering this Section, the Commission shall consider species selection, location, and timing of the plantings as well as whether:
  - (1) Existing vegetation is in a state of irreversible decay, or undesirable vegetation is present as a result of unintentional lack of maintenance.
  - (2) A bank or slope stabilization plan requires the restructuring of soils occupied by the vegetation to be removed.
  - (3) The vegetation being removed is an aggressive, invasive, or non-native species as professionally confirmed or as listed on a wetlands plant list acceptable to the Commission, such as, but not limited to that published by the United States Fish and Wildlife Service.
  - (4) The vegetation is being removed as part of a project whose primary purpose is to restore or otherwise improve the natural capacity of a resource area to protect and sustain the interests of the Bylaw; also called Resource Area Enhancement.
  - (5) The vegetation is being removed and replaced elsewhere on the project site or within the same resource area only if the Commission determines that such removal and replacement does not decrease the resource area's contribution to the resource area values protected by the Bylaw.
  - (6) The vegetation is an imminent risk to public health or safety or property as confirmed in writing and submitted to the Commission by the Arlington Tree Warden, Fire Department, Public Safety Officer, or a certified arborist.
  - (7) Any proposed removal and replacement of vegetation complies with the Replacement Standards in Subsection F below.
- E. Application for Removal. For all projects, the application for vegetation removal shall be submitted as part of the application for permit or Notice of Intent as described by the Bylaw and these regulations. At a minimum, the application shall include:
  - (1) A narrative which shall describe the existing conditions, the proposed planting plan, the list of existing and proposed species, the size of existing and proposed species, and number of plants before and after revegetation.
  - (2) A narrative that shall also provide the rationale for the removal, by addressing the criteria D1 through D6 above, and discuss the proposed maintenance plan (see E.(7) below). The replacement of vegetation shall be according to the requirements in this Section unless the Applicant proves that the amount of replacement vegetation will not survive or contribute in the long-term to resource area values. A rationale for the species, size, and replacement quantities must be provided if not consistent with these requirements.
  - (3) Written narrative and scaled diagram from a certified arborist or wetland scientist or landscape architect. At a minimum, this document must include the following information:
    - (a) Why the vegetation removal necessary? (See D. above)
    - (b) How much surface area of the vegetation will be removed (ft²-based on drip line)?
    - (c) How many individual plants will be removed by species; *i.e.*, is the species list submitted with the NOI correct?

#### **Arlington Regulations for Wetlands Protection**

Draft - February 18, 2021

(4) A proposed planting plan drawn to scale and identifying the resource area (including AURA) and the project site, and including the locations of each replacement species and the number of each species proposed for planting in table form.

The planting plan must include the location of the erosion control devices used during the restoration event and a note describing the storage location of all motorized equipment.

The planting plan shall show the estimated tree canopies after 15 years of growth, the specific names, sizes and locations of trees to be planted, and the total area of square feet of the area shaded by tree canopies. In determining the shaded area, measure the shaded area assuming that the shaded area is only that area directly under the drip line.

The planting plan and procedures shall comply with the American Standards for Nurserymen, Inc. or equivalent.

(5) A species list showing existing conditions before the restoration in terms of area of coverage (ft<sup>2</sup>) and number of individual plants and either height or dbh as specified in the tables below.

#### F. Replacement Standards.

(1) Replacement Requirements for Trees:

The following table indicates requirements for replacement quantity of Trees based on size of the Tree being removed. The size of the replacement Tree(s) shall be at least three inches in diameter at six inches in height above natural grade, or as approved by the Commission.

\*may require replacement at discretion of Commission dbh = diameter at breast height **Comment [ES7]:** AAN standards for height of evergreen?

- 1. If a plant is healthy with a single stem, well-shaped and bushy, and has sufficient well-spaced side branches to give it weight and good bud qualities, it is an acceptable plant.
- 2. On multi-stem trees, height shall be defined as the measurement taken from the ground level to the average uppermost point of growth of the plant.
- 3. All replacement plants shall have ball sizes which are of a diameter and depth to encompass enough of the fibrous and feeding root system as necessary for the fully recovery of the plant once planted.
- 4. Sapling trees shall include deciduous trees with a dbh of 1.5 inches and less; evergreens of 2 feet or less and shall be replaced at the discretion of the Commission so as to reach an equivalent area of coverage and soil retention.

#### (2) Replacement Requirements for Shrubs:

The replacement of shrubs (bushes) shall be with bushes and shrubs of equivalent size. For bushes, the replacement must be healthy with a single stem, well-shaped and bushy, and have sufficient well-spaced side branches to give it weight and good bud quality as per the American Association of Nurserymen standards.

- (3) Vegetation replacement is not considered successful until the replacement plants have survived three full growing seasons. The maintenance plan shall describe how the restoration will be evaluated annually for three years and reported to the Commission. The Commission reserves the right to require a revised replanting plan, or additional plantings on an annual basis in the event that the revegetation plants are not successful.
- (4) Replacement plant materials shall conform to the requirements described in the latest edition of American Standard for Nursery Stock, which is published by the American Association of Nurseryman ("AAN").
- (5) For extensive pruning or removal of vegetation because of an Imminent Risk to Public Health and Safety, in-kind replacement shall be to the extent practicable as determined by the Commission (See Section 9 of these Regulations for Emergency Certification).

## G. The Commission may require one or more of the following measures to protect vegetation during work:

(1) Tree protection fencing – Prior to commencing work, four (four-foot-high sections of snow fencing shall be installed and secured with wooden stakes (2" x 4" or 2" x 3") or 6-foot steel channel posts so as to create an enclosure at the dripline of tree(s) or other distance as the site conditions allow to be protected. Such fencing shall be securely erected, be vertically plumb and be maintained for the duration of the project and shall protect individual trees or groups of trees.

- (2) Tree protection blanket "BarkSavers" or similar armored blankets shall be installed and maintained according to product specifications.
- (3) No existing trees shall be used for crane stay, guys or other fastening.
- (4) Vehicles shall not be parked below the canopy of any existing tree or where damage may result to existing trees or tree roots.
- (5) Construction materials shall not be stored beneath the drip line of existing trees.
- (6) Following completion of work, a certified arborist shall regularly monitor the health of trees on site for possible damage and take measures to repair any damage.
- (7) Prior to commencing work prepare and submit a tree protection plan summarizing all trees on site (including dbh, species, extent of canopy, roots and health) and specifying whether each tree shall be saved or lost.
- H. The Commission may require the placement of permanent bounds (e.g., granite or metal) to demarcate all or part of a resource area or vegetation mitigation area.
- I. The Commission reserves the right to administer the requirements of this section in its sole discretion commensurate with the nature, scope, type, and cost of the proposed project or activity.

#### Section 26 – Adjacent Upland Resource Area

#### A. Findings.

- (1) The Adjacent Upland Resource Area (AURA) is significant to wildlife, plant or wildlife habitat, to water quality, public and private water supply, to groundwater supply, to flood control, to storm damage prevention, to prevention of pollution, to erosion control and sedimentation control, to natural character and recreation, to protection of surrounding land and other homes or buildings and to mitigation of potential climate change impacts.
- (2) Trees in the AURA provide additional important functions not provided by any other plant type. Trees provide shade to moderate water temperatures and levels of dissolved oxygen and water flow. Trees also mitigate heat island effects and sequester carbon as natural solutions to reducing greenhouse gases. They serve as windbreaks to moderate wind stress and shear during storms, and provide nesting, roosting and perching areas for birds and other wildlife. The transitional assemblage of trees, shrubs and groundcover (containing both wetland and upland elements) frequently found in AURAs has been found significant to the support of a greater number of native and specialist wildlife species in the interior of resource areas, which they border.
- (3) Lands within the AURA are best left undisturbed or in a natural or vegetated state. These lands play a critical role in protecting the important functions provided by wetlands, waterways and water bodies. Undisturbed AURAs:
  - a. Reduce runoff velocity and filter pollutants, which mitigate erosion and nutrient and other pollutant transport to wetland resources.
  - Enhance the capacity of resource areas to adapt and provide resilience to challenges presented by climate change such as increased flooding and drought events.

- Provide habitat for wildlife that also utilize wetlands, waterways, and water bodies.
- (4) There is overwhelming scientific consensus that significant physical, chemical, or biological alterations to AURAs will have significant physical, chemical, or biological impacts on associated or adjacent wetland resource areas such as banks, creeks, streams, rivers, ponds, lakes, and wetlands. AURAs are important to the protection of these resources because activities undertaken in close proximity to wetlands and other resource areas protected by the Bylaw have a high likelihood of adverse impact upon those areas, either immediately, as a consequence of construction, or over time, as a consequence of daily operation or existence of the activities. These adverse impacts from construction activities, impervious surfaces, and use can include, without limitation, erosion, siltation. loss of groundwater recharge, loss of flood control or storm damage prevention, poor water quality, harm to wildlife and wildlife habitat, and loss of resource resiliency for potential impacts of climate change. The ability of the AURA to protect a wetland resource, and to provide habitat, increases with buffer width and continuity. (5) Generally, vegetated buffers within the AURA and next to the adjacent resource area of less than 25 feet wide are ineffective in protecting adjacent wetlands or providing wildlife habitat functions. Vegetated buffers often wider than 25 feet are necessary to provide wildlife habitat and to protect adjacent resource areas from continuing activities such as inputs of sediments and nutrients which adversely affect water quality, to protect from direct human disturbance, to protect sensitive species from adverse impacts, and to protect adjacent resource areas from the adverse effects of climate change. (6) The effectiveness of buffers in removing pollutants is dependent upon slope, soil condition, pollutant type, flow patterns, vegetation, exposure to sunlight, width and upland land use. Steep slopes increase the velocity at which water travels through a buffer, thereby decreasing the amount of time that rain can filter through soil and vegetation. For removal of most pollutants, flat slopes with gradients of less than 5% are
- B. Definition and Boundary. The AURA is the area adjacent to a resource area specified in Section 2, A(1) through (4) and is the land within 100 feet (measured horizontally) of any of the aforesaid resource areas.

desirable. Increasing buffer width is common when slopes are steeper than 15%.

- C. Evaluation of Alternatives to Work in Adjacent Upland Resource Area. Work and activity in the AURA shall be avoided and discouraged, and practicable alternatives pursued that achieve the project purpose. Where work is proposed in the AURA, the Applicant shall conduct an Alternatives Analysis to prove by a preponderance of evidence that the project as proposed has met the standard of avoid, minimize and mitigate and there are no practicable alternatives to the proposed project with materially less adverse or cumulative effects on the interests protected by the Bylaw, and that the work, including proposed mitigation will have no significant adverse impacts.
  - (1) Definition of Practicable. An alternative is practicable and substantially equivalent economically if it is available and capable of being done after taking into consideration costs, existing technology, proposed use, and logistics, in light of overall project scope or purpose. The Commission shall consider as practical alternative options that were available to the Applicant but appear to be precluded due to self-imposed hardships and

constraints (e.g., lot, roadway and drainage layouts engineered without proper regard to impact on Wetland Resource Areas protected by the Bylaw). The four factors to be considered are:

- a. The Proposed Use. This term is related to the concept of project purpose. In the context of a typical single family home, the project purpose (construction of a single family house) and proposed use (family home) are virtually identical. In the context of projects where the purpose implies a business component, the proposed use typically requires economic viability. Practicable and substantially equivalent economic alternatives include alternatives which are economically viable for the proposed use from the perspective of site location, project configuration within a site, and the scope of the project. In the context of publicly financed projects, the proposed use includes consideration of legitimate governmental purposes (e.g., protection of health and safety, providing economic development opportunities, or similar public purposes);
- b. Logistics. Logistics refers to the presence or absence of physical or legal constraints. Physical characteristics of a site may influence its development. Legal barriers include circumstances where a project cannot meet other applicable requirements to obtain the necessary permits at an alternative site. An alternative site is not practicable if special legislation or changes to municipal zoning or zoning variance would be required to achieve the proposed use or project purpose.
- c. Existing Technology. Existing technology, which includes best available measures (i.e., the most up-to- date technology or the best designs, measures, or engineering practices that have been developed and are commercially available);
- d. Costs. Costs, including both costs of the alternatives and overall project costs, and whether such costs are reasonable or prohibitive to the owner. Higher or lower costs taken alone will not determine whether an alternative is practicable. Applicants should not submit, nor should the Commission request, financial information of a confidential nature, such as income tax records or bank statements. The Commission may require documentation of costs, but may also base its determinations on descriptions of alternatives, knowledge of alternative sites, information provided by qualified professionals, comparisons to costs normally associated with similar projects, or other evidence. Any documentation of costs should be limited to that required for a determination of whether the costs are reasonable or prohibitive.
- (2) Scope of Alternative Analysis. The purpose of evaluating project alternatives is to locate activities so that impacts to the AURA are avoided to the extent practicable. The applicant shall submit information to describe sites and the work both for the proposed location and alternative site configurations and locations. The Applicant shall have the burden of proof for providing credible evidence that the work proposed will not have unacceptable significant or cumulative effects upon resource area values protected by the Bylaw. Failure to provide adequate evidence shall be sufficient cause for the Commission to deny a permit or grant a permit with special conditions.
- (3) The Alternative Analysis shall include at a minimum: a) an alternative that does not alter the AURA to provide baseline data for evaluating other alternatives, and b) an assessment of alternatives to both temporary and permanent impacts to the AURA including configurations that would avoid, minimize, and mitigate disturbance and

alteration by either moving the proposed project outside of or farther away from wetland resources or reducing the size of the proposed project. It shall also include a description of all reasonable identified alternatives that were considered by the Applicant along with the reasons why such alternatives were considered inadequate, unworkable or inadvisable. The level of detail of information shall be commensurate with the scope of the project and the practicability of alternatives. Where an applicant identifies an alternative which can be summarily demonstrated to be not practicable, an evaluation is not required. The Applicant shall carry the burden of proof for demonstrating to the Commission that activities in the AURA are necessary.

- D. The Commission may, in its discretion, allow temporary, limited, or permanent disturbance as appropriate and consistent with this Section if the Applicant proves that there are no practicable alternatives to the project with materially less adverse and cumulative effects on the interests protected by this bylaw and convinces the Commission by a preponderance of evidence that the area or part of it may be altered without harm to the values protected by this Bylaw taking into consideration the characteristics of the AURA, including but not limited to the following:
  - (1) slope
  - (2) soil characteristics
  - (3) drainage patterns
  - (4) extent and type of existing native vegetation
  - (5) extent and type of invasive vegetation
  - (6) amount of impervious surface
  - (7) wildlife and wildlife habitat
  - (8) intensity and extent of use
  - (9) intensity and extent of adjacent and nearby uses
  - (1) capacity to provide resilience to climate change

This approach is intended to allow flexibility for use of property while maintaining necessary levels of protection of the resource values protected by the Bylaw.

- E. No activities or work, other than passive passage and resource area enhancement, are permitted within the first 25 feet of the AURA (measured horizontally from a resource area specified in Section 2, A(1) through (4). Except as part of Resource Area Enhancement or an Ecological Restoration Project, no vegetation may be disturbed, and leaf litter and natural debris shall remain in place. This No-Disturbance area shall at a minimum contain the same amount of area of undisturbed and natural vegetation as its pre-project state. A previously disturbed or previously developed 25-foot area shall be restored to a naturally vegetated state to the greatest extent practicable. Depending on site conditions including but not limited to slopes greater than 15% on highly erodible soils or hydrologic conditions likely to promote significant erosion, affect soil permeability or other impact potential the Commission may require a wider undisturbed buffer.
- F. No new structure(s) shall be placed in the first 50 feet of the AURA measured horizontally from a resource area specified in Section 2, A(1) through (4). The Commission may allow new structures within the first 50 feet if the project is deemed an overall improvement of the resource area. Depending upon site conditions, including but not limited to slopes greater than 15%

on highly erodible soils, or hydrologic conditions likely to promote significant erosion, affect soil permeability or other impact potential, the Commission may require new structures to be setback greater than 50 feet.

G. For new lots created after (DATE OF REG. REVISION WILL BE INSERTED HERE) by dividing a pre-existing lot of record, or for undisturbed AURA (AURA determined by the Commission to be of a predominately natural character or to have been altered without a permit from the Commission), when partial intrusion into the AURA is unavoidable, in addition to the requirements noted above, the Applicant must mitigate the intrusion by increasing the width of a buffer (as addressed in E. above) by an amount equal to or greater than the distance of the intrusion into the AURA. For unavoidable encroachment, as mitigation, the Commission may require improvements to remaining undisturbed AURA function.

#### H. Impervious surface.

- (1) The total area of impervious surface within the AURA shall not increase over existing total area unless the Commission in its sole discretion determines, based on sufficient proposed mitigation, that there is no permanent, significant impact on Resource Area values.
- (2) Impervious surfaces shall not intrude farther into the AURA than pre-project conditions unless the Commission in its sole discretion determines that the total area of impervious surface is significantly decreased or other sufficient mitigation is provided that serves to protect the resource area values. Impervious surface shall be kept as close as possible to the outer (upland) boundary of the AURA.
- (3) Work in the AURA shall not adversely affect the hydrology of the site including runoff rates, volume, water quality, flood storage capacity, or flow paths.
- I. For permitted projects in the AURA, landowners shall not apply or allow the application of phosphorus-containing fertilizers in the AURA unless needed as indicated by a soil test. All landowners in AURAs are otherwise expected to follow 330 CMR 31.00 Plant Nutrient Application Requirements for Agricultural Land and Land Not Used for Agricultural Purposes.
- J. Certain Proposed Activities in AURA. The AURA should be left intact in a naturally vegetated state to the maximum extent practicable and as provided in these regulations. However there are some activities that may be permitted by the Commission that are not likely to have a significant or cumulative effect on the resource area values of the Bylaw, nor are they expected to have a significant effect on the resource area resilience to climate change, provided the other provisions of these Regulations are met. These proposed activities are addressed in Section XX: Administrative Review.

#### Section 27 – Vernal Pool and Its Associated 100-Foot Adjacent Upland Resource Area

#### A. Findings

(1) Vernal Pools and their associated 100-foot No-Disturbance Zones are likely to be significant to the protection of wildlife habitat and rare plant and animal habitat. Vernal

Pools constitute a unique and increasingly rare type of wetland that is inhabited by many species of wildlife, some of which are completely dependent on Vernal Pools and their associated habitat for their survival. Areas in the immediate vicinity of the Vernal Pool (i.e., 100-foot Adjacent Upland Resource Area) provide these species with important non-breeding habitat functions, such as migratory pathways, feeding, shelter, and overwintering sites. Many other species utilize Vernal Pools and their associated Adjacent Upland Resource Area for breeding and non-breeding functions, although such species are not limited to this type of wetland. The protection of Vernal Pools and their associated Adjacent Upland Resource Area are essential for the survival of wildlife species that depend on these unique and threatened resource areas. Vernal Pools need not be state-certified in order to be protected under the Bylaw or these Regulations.

(2) The extreme edges of Vernal Pool habitat represent one of the most ecologically valuable portions of these habitats. Shallow water at the edges of a pool generally is the first to thaw in the spring. This provides early access to the pool for the earliest breeding species. The shallow water zones also tend to be significantly warmer than the deeper portions of a vernal pool throughout the spring. Egg masses of early breeding amphibians benefit from the warmer water temperatures at the pool edges that promote rapid egg development.

#### B. Definition, Critical Characteristics and Boundary:

- (1) Vernal Pools exhibit a tremendous variation in physical, geographic, hydrologic and vegetative conditions, and therefore, for the purposes of these Regulations, these conditions are not considered reliable criteria for their identification. A Vernal Pool is a temporary freshwater body, which, in most years holds water for a minimum of two (2) months and is free of established, reproducing fish populations, and is protected by these Regulations if it meets any of the following criteria:
  - (a) The Vernal Pool contains evidence of the presence of any one (1) of the following obligate indicator species: Spotted Salamander, Blue-Spotted Salamander, Jefferson Salamander, Marbled Salamander, Wood Frog or Fairy Shrimp, or;
  - (b) In the absence of any obligate indicator species, the Vernal Pool contains evidence of two (2) of any of the following facultative indicator species: Spring Peeper, American Toad, Green Frog, Pickerel Frog, Gray Tree Frog, Four-Toed Salamander, Spotted Turtle, Caddisfly larvae or cases of Caddisfly larvae, Dragonfly or Damselfly larvae or shed skins (exuvia) of Dragonfly or Damselfly larvae, adults, juveniles or shells of either Fingernail Clams or Amphibious, air-breathing Snails.
- (2) The boundary of Vernal Pool is the lower of:
  - (a) the maximum elevation of a topographic depression that holds water for a minimum of two (2) continuous months each year; or
- (b) the maximum observed or recorded water level in a topographic depression. The boundary of vernal pool may be defined differently for the purpose of state or federal protection. The boundary of vernal pool is not established when a vernal pool certification number is issued by the Commonwealth.

C. Timing of Evidence Collection: Many of the indicators of Vernal Pool habitat are seasonal. For example, certain salamander egg clusters are found only between late March and late May; Wood Frog chorusing occurs only between late March and late May, and then only at night.

Consequently, failure to find evidence of breeding must be tied explicitly to those periods during which the evidence is most likely to be available.

Accordingly, in the case of challenges to the presumption of Vernal Pool habitat, the Commission may require that the determination be postponed until the appropriate time period consistent with the evidence being presented. The Commission may also require its own site visit(s) as necessary to confirm the evidence.

- D. Presumptions of Significance for Adjacent Upland Resource Area to a Vernal Pool: Where a proposed activity involves the removing, filling, dredging, or altering of a Vernal Pool or its 100-foot Adjacent Upland Resource Area, the Commission shall presume that the Vernal Pool and its 100-foot Adjacent Upland Resource Area is significant to the protection of wildlife habitat and rare plant and animal habitat.
- E. Performance Standards for 100-foot Adjacent Upland Resource Area: Unless the presumption set forth in Section 21.D of these Regulations is overcome, the following standards shall apply to Vernal Pools and their 100-foot Adjacent Upland Resource Area:
  - (1) 100-foot Adjacent Upland Resource Area: No activity shall be permitted within 100 feet of the delineated edge of a Vernal Pool, or in the case of a wetland resource area that encompasses the pool, within 100 feet of the delineated edge of said wetland resource area. Prohibited activities include, but are not limited to, grading, landscaping, vegetation control, pruning, cutting, filling, excavation, roadway construction and/or driveway construction.
  - (2) Adjacent Upland Resource Area to Vernal Pool Demarcation: To maintain the perpetual integrity of the 100-foot Adjacent Upland Resource Area and to ensure that there will be no encroachments into this Area by the applicant or future owners of the subject property, the Commission may require the Adjacent Upland Resource Area to be marked on the ground, at the applicant's expense, with permanent markers. These markers shall be made of weather resistant material (e.g. granite, concrete, other), and the Commission shall determine their number, location and size. The Commission may require the maintenance of such markers in any certificate of compliance issued for the project.

#### Section 28 – Riverfront Area

The Commission accepts and adopts the definitions, requirements, and performance standards for Riverfront Area as specified in the Massachusetts Department of Environmental Protection's Wetlands Regulations in 310 C.M.R. 10.58.

#### **Section 29 - Variances**

A. The Conservation Commission may, in its discretion, grant variances from the operation of one or more of the provisions of the Bylaw, or the rules and regulations promulgated thereunder. Such variances are intended to be granted only in rare and unusual cases and upon a showing of clear hardship relating to the subject premises if the requested relief is not granted.

- B. The standards as set forth herein shall be the sole basis upon which a variance shall be granted.
- C. Applicants shall file a written request for variance at the same time as or as soon as possible an application (Notice of Intent) for a permit is filed with the Commission and, in any event, prior to the close of the hearing on said application. Such variance request shall be made in writing and shall be a separate writing from the application or request forms.
- D. At any time subsequent to filing of the variance request, but in no event less than ten calendar days prior to the date of commencement of the public hearing at which the variance request is to be considered, the Applicant or his or her or its representative shall submit to the Commission and copies to each Commission member (including associate member) a written statement in support of the variance request. Such written statement shall include but not be limited to the following items:
  - (1) A brief statement of the relief sought;
  - (2) A description of all reasonably identifiable alternatives to the Applicant's proposal that were considered by the Applicant and that would avoid or minimize the necessity of the requested relief, along with the reasons why such alternatives were deemed to be inadequate, unworkable or inadvisable;
  - (3) A statement of all efforts that will be undertaken to minimize impact upon resource areas and buffer zones arising out of the work proposed;
  - (4) Detailed plans for any mitigation measures proposed;
  - (5) Adequate engineering and expert evidence to permit the Commission to evaluate the basis for the Applicant's contentions in support of the variance requested; and
  - (6) Any and all relevant information which the Applicant wishes the Commission to consider in deliberating the variance request.
- E. A variance may be granted only for the following reasons and upon the following conditions:
  - (1) The Conservation Commission may grant a variance upon a clear and convincing showing by the Applicant that any proposed work, or its natural and consequential impacts and effects, will not have any adverse effect upon any of the interests protected in the Bylaw, and that there are no reasonable conditions or alternatives that would allow the work to proceed in compliance with these regulations and the Bylaw. It shall be the responsibility of the Applicant to provide the Conservation Commission with any and all information that the Commission may request orally or in writing, in order to enable the Commission to ascertain such adverse effects, and the failure of the Applicant to furnish any information that has been so requested shall result in the denial of a request for variance.
    - (2) The Conservation Commission may grant a variance from these rules and regulations when necessary to avoid so restricting the use of the property as to constitute a taking of private property without compensation. The Commission may request an opinion from Town Counsel or other legal consultant at the expense of the Applicant as to whether the application of the Bylaw to a particular case will result in a taking of property without compensation.

#### Section 30 - Areas of Critical Environmental Concern

A. Any areas within the Town of Arlington which have been designated as Areas of Critical Environmental Concern by the Secretary of Energy and Environmental Affairs, Commonwealth of Massachusetts, are so designated due to the particularly unique environmental factors that affect such areas and that highlight the unique importance of each area so designated.

B. As a result of such designation, it is incumbent upon the Commission to be even more diligent in its review of projects proposed within such areas. The highest standards of scrutiny as to the impact of any proposal are required shall be exercised by the Commission.

C. Further, close scrutiny shall be given by the Commission to any proposals involving an application of new pavement or newly installed other impervious materials within any area less than 100 feet from Bordering Vegetated Wetland, Bank, Beach, and Meadow.

#### Section 31 – Wildlife Habitat

The Town of Arlington accepts and adopts the definitions, requirements, and performance standards for wildlife habitat as specified in the Massachusetts Department of Environmental Protection's Wetlands Regulations in 310 CMR 10.00.

#### Section 32 – Climate Change Resilience

A. Findings. The impacts of climate change can adversely affect each Resource Area's ability to provide and promote the resource area values protected by the Bylaw. (See definitions of "adaptation" and "alter" and "impacts of climate change" "resource area values" and other climate change-related definitions in Section 4 above). Resource Areas are critical to building a community's resilience/adaptation to the impacts of climate change due to their ability to provide for flood control, storm damage prevention, extreme temperature mitigation, and other Resource Area Values including but not limited to water supply protection; pollution prevention; erosion and sedimentation control; protection of surrounding land and other homes or buildings; wildlife, plant, and aquatic species protection; habitat protection; and the protection of the natural character or recreational values of the wetland resources.

B. The Applicant shall, to the extent practicable and applicable as determined solely by the Commission, integrate considerations of adaptation planning into their project to promote climate change resilience so as to protect and promote resource area values into the future. These considerations are especially important in Land Subject to Flooding (floodplain) and Riverfront Area and other Resource Areas which protect the interest of Flood Control and Storm Damage Prevention, including Adjacent Upland Resource Areas. These Resource Areas may be directly impacted by extreme weather events expected to be more prevalent or more intense due to climate change, in surface runoff of pollutants, and in wildlife habitat due to changes in temperature.

C. The Applicant shall, to the extent practicable and applicable as determined solely by the Commission, ensure that the project is consistent with other local and state guidelines, best practices, and policies concerning climate change resilience, including, but not limited to: municipal vulnerability preparedness, green infrastructure, and nature-based solutions.

D. The Applicant shall consider the project's adaptation to potential climate change impacts by addressing the following in writing:

- Describe project design considerations and potential measures to limit storm and flood damage during extended periods of disruption and flooding as might be expected in extreme weather events, using the FEMA 500-year flood elevation to represent extreme weather event flood levels, depending on the size and nature of the project. See Vegetative Wetlands Section 22, Land Subject to Flooding Section 24, and Adjacent Upland Resource Area Section 26, of these Regulations.
- 2. Calculate project stormwater surface runoff that is expected to increase due to extreme weather events, and how this will be managed and mitigated to prevent pollution (including nutrients from fertilizers, roadway runoff, etc.) from entering the resource area in the future, with consideration of eliminating or decreasing impervious surfaces as much as feasible. See Stormwater Management Section 33 of these Regulations.
- 3. Describe project vegetation/planting plans and other measures to improve the resiliency of the resource areas to provide resource area values including but not limited to wildlife habitat; that is, to enable resource areas to withstand extreme precipitation/rainfall changes (drought and excess) and extreme temperatures including extreme heat due to climate change. See Vegetation Removal and Replacement Section 25 of these Regulations.
- 4. Describe measures to protect surrounding land and other homes or buildings due to the impacts of climate change.

#### **Section 33 - Stormwater Management**

A. To the extent that standards for Stormwater Management in 310 CMR 10.05(6)(k) and the requirements of Arlington's Stormwater Mitigation Bylaw are applicable, projects shall meet those standards. Nothing in these Regulations is intended to replace or be in derogation of the requirements of the Wetland Protection Act (310 CMR) or the Town of Arlington's Stormwater Management Bylaw (Article 15) and Stormwater Management Rules and Regulations administered by the Town of Arlington's Engineering Division. In the case of conflict between the regulations, the more stringent provisions shall apply. Should a project require a Stormwater Permit under Article 15 and approval of the Conservation Commission, the Applicant shall obtain approval of the Stormwater Management permit prior to the closing of a public hearing by the Conservation Commission. Should an Applicant fail to obtain such approval, the Conservation Commission shall deny the permit for the project.

- B. Stormwater management design for all projects (including projects that do not require a Stormwater Management Report under 310 CMR 10.05 (6)(k) or projects that are exempt under Arlington's Stormwater Management Rules and Regulations) specified in a request for determination of applicability or an application for a permit shall accomplish the following:
  - (1) Not exacerbate or create flooding conditions and shall not result in an increase in the peak rate of stormwater runoff over existing conditions during storm events.
  - (2) Reduce stormwater pollution to the maximum extent possible. Low Impact Development techniques listed in the Massachusetts Stormwater Handbook, (LID BMPs) should be prioritized for their positive impact on overall site climate change resilience, improvements to water quality, and ability to handle water quantity. Depending upon the type of project proposed, this may include but not be limited to reduction in impervious surfaces, bio-retention (rain gardens) and infiltration systems.
  - (3) Have a written operation and maintenance plan to inspect, properly maintain, and routine or minor repair installed BMPs after project completion to ensure they are functioning according to the design intent in perpetuity.
- C. The rainfall amounts used for design and analysis shall be based on NOAA Atlas 14, Volume 10 (latest version) NOAA Plus (NOAA+) which is the 90% of the NOAA Precipitation Frequency estimates at the upper bound of the 90% confidence level for the project site. NOAA+ is calculated as: 0.9 x upper bound of 90% confidence interval. Calculations shall show existing and proposed runoff conditions for comparative purposes and include a narrative on the proposed project's impact on climate change resilience of the resource area (see Section 31).
- D. The requirements of this section shall be administered by the Commission commensurate with the nature, scope, type, and cost of the proposed project or activity.

#### **Section 34 - Ecological Restoration Projects**

The Commission may allow ecological restoration projects as defined and provided in 310 CMR 10.00.

#### **Section 35 - Severability; Compliance With Court Decisions**

A. The invalidity of any section or provision of the Bylaw or of these regulations shall not invalidate any other section or provisions thereof, nor shall it invalidate any permit which previously has been issued.

B. If any Court of the Commonwealth shall invalidate any provisions of the Bylaw or of these regulations, the Conservation Commission may promulgate additional rules and regulations or present to the next Town Meeting after such invalidations, amendments to the Bylaw or regulations which are designed to comply with any Court decision invalidating such provisions or regulations, as the case may be.

#### **Section 36 - Effective Date**

The effective date of these rules and regulations shall be *March 1, 2021*, and the provisions of these rules and regulations shall apply to all work performed, and all applications or requests for determination of applicability received on or after that date.

[Editor's notes: Regulations first approved January 4, 2001; revised: June 2001, September 20, 2001; February 2005; April 7, 2005; September 16, 2010; January 20, 2011; June 4, 2015; and March 1, 2018. \_\_\_??, ??, 2021.]

**Comment [ES8]:** Change date depending on adoption date



#### **Town of Arlington, Massachusetts**

#### Request for Determination of Applicability

#### Summary:

Request for Determination of Applicability: 25 Henry Street

Arlington File #A21.2

7:45pm

The project proposes to construct a driveway and stormwater management system partially within the Riverfront Area of Reed's Brook. This project is part of a larger project to construct a single-family home on the lot, which is currently undeveloped. The proposed single-family home is outside of conservation jurisdiction.

#### ATTACHMENTS:

	Туре	File Name	Description
ם	Request for Determination of Applicability	25_Henry_St_RDA.pdf	25 Henry St RDA
ם	Request for Determination of Applicability	25_Henry_St_Plan.pdf	25 Henry St Plans
ם	Request for Determination of Applicability	25_Henry_St_Stormwater_Report.pdf	25 Henry St Stormwater Report

## **Request for Determination of Applicability**

### **Proposed Single Family Home**

25 Henry Street
Arlington, Massachusetts

Prepared for;

John Carney 98 Richfield Rd. Arlington, MA 02476

Prepared by;

**Salem Village Consulting, LLC** 90 PINE ST. DANVERS, MA 01923

February 3, 2021

### **Table of Contents**

#### **Tab 1: Forms**

WPA Form 1-request for Determination of Applicability Copy of Check

#### **Tab 2: Project Information**

Narrative
Site Photographs
USGS Site Locus
FEMA Flood Map
Natural Heritage & Endans

Natural Heritage & Endangered Species Map

#### **Tab 3: Abutter Information**

Certified Abutters list Notification to Abutters Affidavit of Service

Tab 4: Project Plan



Arlington City/Town

# **WPA Form 1-** Request for Determination of Applicability Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

#### A. General Information

iiiiportant.
When filling out
forms on the
computer, use
only the tab key
to move your
cursor - do not
use the return
kev

Important:





1.	Applicant:				
	John Carney	cccarney67	cccarney67@gmail.com		
	Name		E-Mail Address		
	98 Richfield Rd.				
	Mailing Address				
	Arlington	MA	02474		
	City/Town	State	Zip Code		
	617-590-5485				
	Phone Number	Fax Number (if	applicable)		
2.	Representative (if any):				
	Salem Village Consulting, LLC				
	Firm				
	John Barrows		_pe@yahoo.com		
	Contact Name	E-Mail Address			
	90 Pine St.				
	Mailing Address				
	Danvers	MA	01923		
	City/Town	State	Zip Code		
	978-204-2390	<u></u>			
	Phone Number Fax Number (if applicable)				
_	Determinations				
В.	. Determinations				
1.	I request the Arlington make the follow	ving determination(s	). Check any that apply:		
•	I request the Arlington make the following determination(s). Check any that apply:  Conservation Commission				
a. whether the <b>area</b> depicted on plan(s) and/or map(s) referenced below is an area subject to					
					jurisdiction of the Wetlands Protection Act.
b. whether the <b>boundaries</b> of resource area(s) depicted on plan(s) and/or map(s) reference					
	below are accurately delineated.				
	Marchaelland and an and the control of the control	la Para Delantita di a	Matter de Deste d'es Aut		
	c. whether the <b>work</b> depicted on plan(s) referenced bel	low is subject to the	vvetiands Protection Act.		
	d. whether the area and/or work depicted on plan(s) referenced below is subject to the jurisdiction				
	d. whether the area and/or work depicted on plan(s) re of any municipal wetlands ordinance or bylaw of:	eletericed below is s	subject to the jurisdiction		
	of any municipal wetlands ordinance of bylaw of.				
	Arlington				
	Name of Municipality				
	Hamo of Mulliopainty				
	e. whether the following scope of alternatives is ade	quate for work in the	e Riverfront Area as		
	depicted on referenced plan(s).	•			



Arlington City/Town

# WPA Form 1- Request for Determination of Applicability Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

C. Project Descriptio
-----------------------

<ol> <li>a. Project Location (use maps a</li> </ol>	and plans to identify the location of the area subject to this request):				
25 Henry Street	Arlington				
Street Address	City/Town				
Map 118 Lot 3					
Assessors Map/Plat Number	Parcel/Lot Number				
b. Area Description (use addition	b. Area Description (use additional paper, if necessary): see attached plan and report				
see attached plan and report					
c. Plan and/or Map Reference(	s):				
Stormwater Management Site Pl	an , 25 Henry Street				
Title	Date				
	ngle Family Home, 25 Henry Street 1/29/21				
Title	Date				
Title	Date				
a. Work Description (use addition see attached plan and report	onal paper and/or provide plan(s) of work, if necessary):				



Arlington City/Town

# WPA Form 1- Request for Determination of Applicability Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

C. Project Description (con
-----------------------------

	Identify provisions of the Wetlands Protection Act or regulations which may exempt the applicant m having to file a Notice of Intent for all or part of the described work (use additional paper, if cessary).
. a. Ri	If this application is a Request for Determination of Scope of Alternatives for work in the verfront Area, indicate the one classification below that best describes the project.
	Single family house on a lot recorded on or before 8/1/96
$\boxtimes$	Single family house on a lot recorded after 8/1/96
	Expansion of an existing structure on a lot recorded after 8/1/96
	Project, other than a single-family house or public project, where the applicant owned the lot before 8/7/96
	New agriculture or aquaculture project
	Public project where funds were appropriated prior to 8/7/96
	Project on a lot shown on an approved, definitive subdivision plan where there is a recorded deed restriction limiting total alteration of the Riverfront Area for the entire subdivision
	Residential subdivision; institutional, industrial, or commercial project
	Municipal project
	District, county, state, or federal government project
	Project required to evaluate off-site alternatives in more than one municipality in an Environmental Impact Report under MEPA or in an alternatives analysis pursuant to an application for a 404 permit from the U.S. Army Corps of Engineers or 401 Water Quality Certification from the Department of Environmental Protection.
b. ab	Provide evidence (e.g., record of date subdivision lot was recorded) supporting the classification ove (use additional paper and/or attach appropriate documents, if necessary.)



Arlington City/Town

### WPA Form 1- Request for Determination of Applicability

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

### D. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Request for Determination of Applicability and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge.

I further certify that the property owner, if different from the applicant, and the appropriate DEP Regional Office were sent a complete copy of this Request (including all appropriate documentation) simultaneously with the submittal of this Request to the Conservation Commission.

Failure by the applicant to send copies in a t Determination of Applicability.	imely manner may result in dismissal of the Request for
Name and address of the property owner:	
John Carney	
Name	
98 Richfield Rd.	
Mailing Address	
Arlington	
City/Town	
MA	02474
State	Zip Code
Signatures:	
I also understand that notification of this Req	uest will be placed in a local newspaper at my expense
in accordance with Section 10.05(3)(b)(1) of	the Wetlands Protection Act regulations.
12	02022021
Signature of Applicant	Date
1 () 2	//,
My our	2/2/2/
Signature of Representative (if any)	Date

SALEM VILLAGE CONSULTING LLC
90 PINE ST
DANVERS, MA 01923-1839

Pay To The Town or ARUNGTON \$ 150 —

ONTE HUNDRED and FITTING Dollars

Bank of America

ACH R/T 011000138

For USHANRY RAA

1:0110001381: 00466995188411 1015

#### **NARRATIVE**

#### SITE INFORMATION

The site is located on the east side of the public roadway Henry St. approximately 200 feet north of Elwern St. The property is bounded by Henry St. to the west and residential use properties to the north, east, and south. The subject property is located in the R-1 zoning district and has a land area of 6,441 square feet. It is shown as Lot 3 on the Arlington assessor's map 118 and has a street address of #25. Refer to the USGS locus map (Figure #1) for the site's location.

#### **EXISTING CONDITIONS**

The property is primarily undeveloped and was recently subdivided from 29 Henry St. There is presently approximately 250 s.f of impervious surfaces from an existing shed and pavement. The remaining areas of the property is made up manicured lawn, brush, and trees. The slopes on the property range between 10 and 60 percent with the grades dropping from the highest elevations at the northeast boundary to the western boundaries Henry St.

Reed Brook is located the opposite side of Henry Street from the locus behind the abutting properties. At the closet point the property is located approximately 180 feet from the edge of the brook. Due to properties' proximity, a portion of the property includes Riverfront Area associated with the brook. A description of the resource area follows in the narrative and have been depicted on the Stormwater Management Site Plan.

Photographs (#1 thru 3) provide a picture of the property's existing condition and Reed Brook. For additional detailed information regarding existing site conditions and topography, refer to the Stormwater Management Site Plan.

#### PROJECT INFORMATION

The project proposes the construction of a 32' by 44' (1,450 s.f.) single family dwelling. Other impervious surfaces that will be created as part of the development includes a walk and driveway to access a two-car garage. When completed the new building site will have approximately 2,400 s.f. of impervious surfaces. The project will also include two stormwater recharge systems. The proposed dwelling will include a roof drainage system of roof gutters and downspouts. The roof drainage will be directly piped to a storm water recharge system. The driveway will be constructed with a trench grate connected to a second recharge system. Information on the site development and the design of the recharge system has been included in the appendix of this report.

Since the project increases the overall amount of impervious surfacesby more than 350 s.f. the project is required to meet the Town of Arlington Stormwater By-Law. To mitigate the stormwater run-off from the property, storm water recharge systems will be constructed as part of the project. This system has been designed to meet the standard for annual loss of recharge to groundwater for the impervious surfaces to be constructed over soils in the Hydrologic Soil group "A".

For detailed information regarding the proposed construction, refer to the Stormwater Management Site Plan.

#### **RESOURCE AREAS**

#### RIVERFRONT AREA

A portion of the property is located within the Riverfront Area associated with Reed Brook. The Riverfront Area extends 200 feet from the top of bank adjacent to the Reed Brook to the front portion of the property. All of the construction will take place over 100 feet from the brook. The closest area of disturbance will take place approximately 180 feet from the edge of the brook. The work proposed includes the dwelling's driveway and the stormwater management system. The new dwelling at its closest point will be approximately 212' from the brook.

PHOTO #1

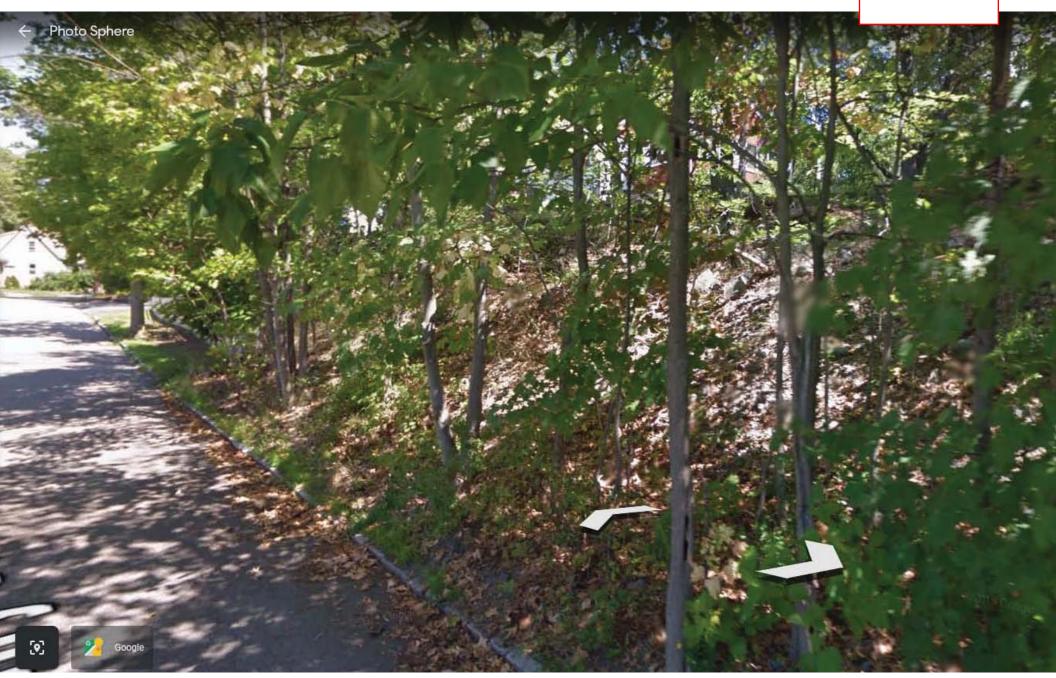






FIGURE 1 MASSACHUSETTS PO Library

### USGS LOCUS MAP

25 HENRY ST. ARLINGTON, MASSACHUSETTS

DRAWN FOR

JOHN CARNEY
ARLINGTON, MASSACHUSETTS

Salem Village Consulting, LLC

90 PINE STREET DANVERS, MA. 01923 (978) 204-2390

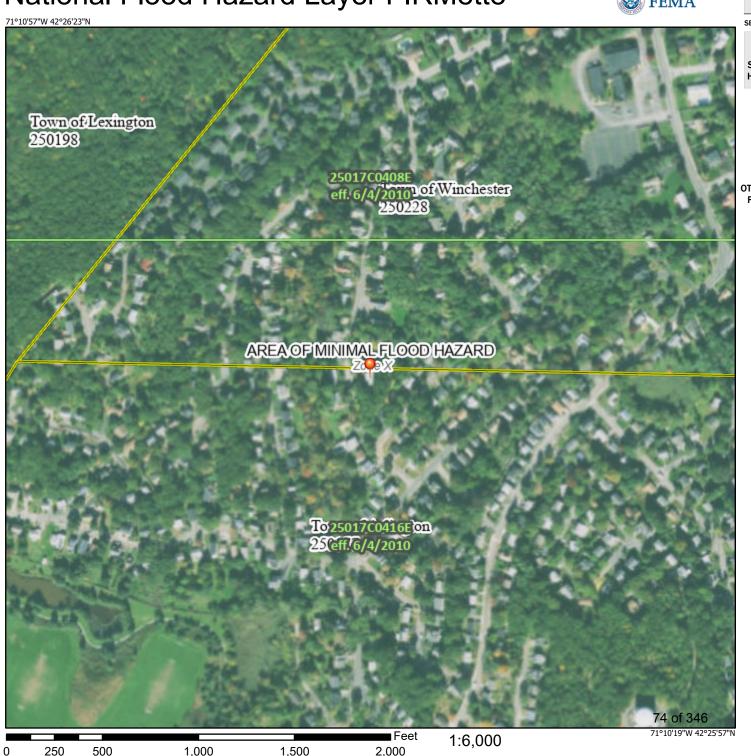
DATE: JANUARY 2021

SCALE: 1"Z306,346

# National Flood Hazard Layer FIRMette

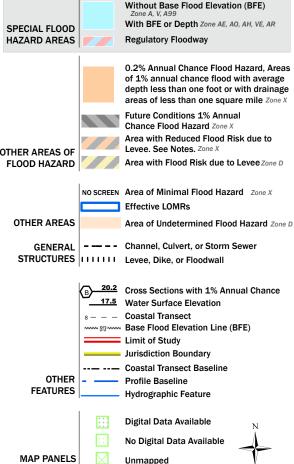


Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020



#### Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT



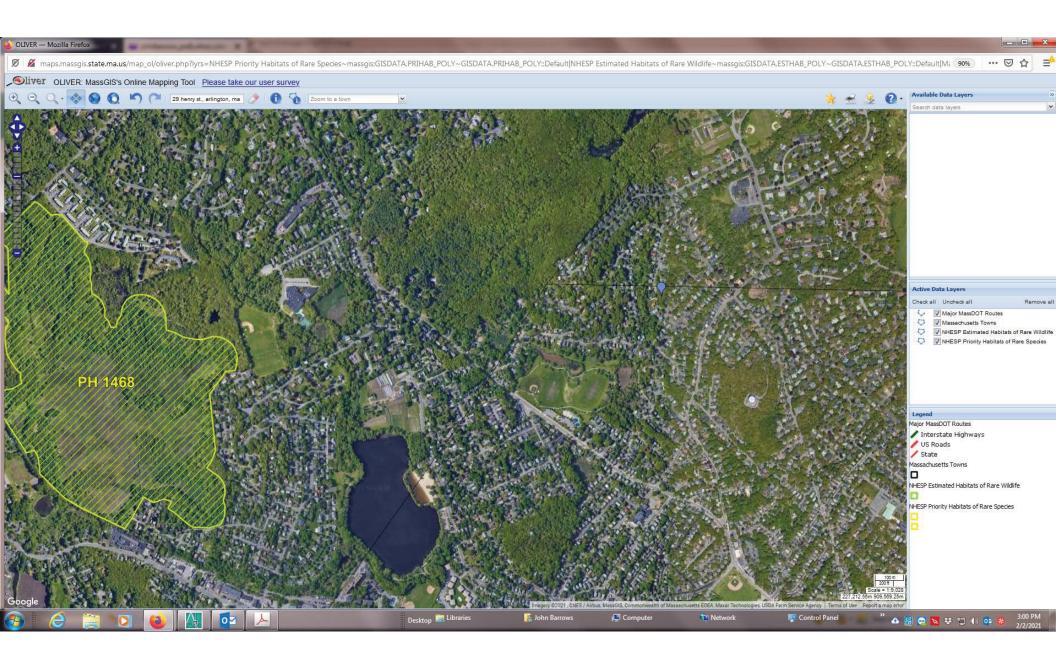
This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

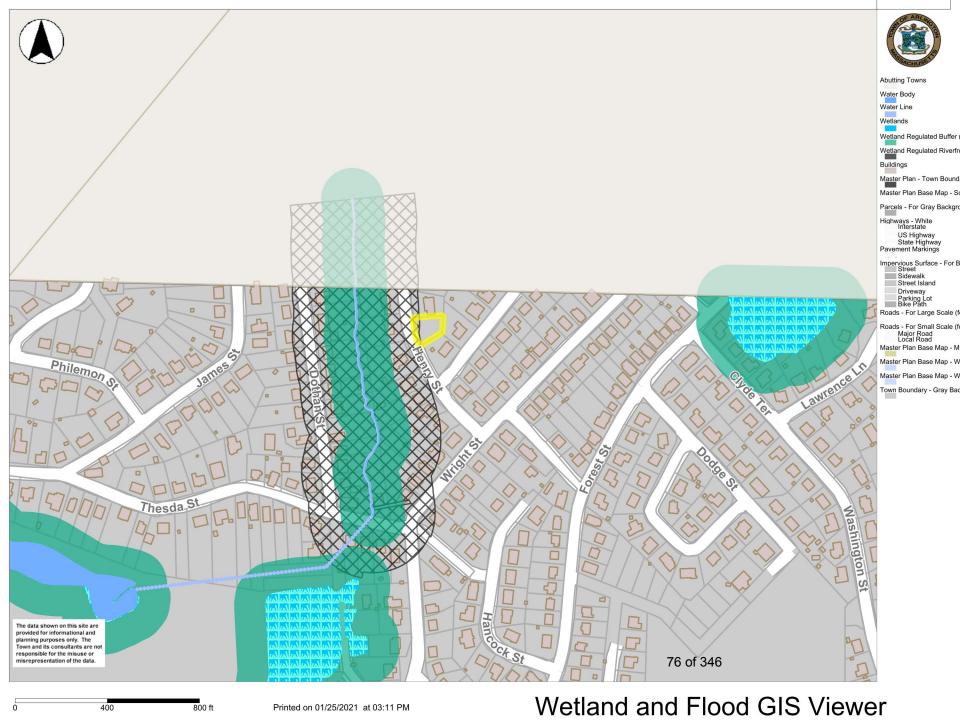
The pin displayed on the map is an approximate point selected by the user and does not represent

an authoritative property location.

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 1/25/2021 at 3:54 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.







#### Office of the Board of Assessors Robbins Memorial Town Hall Arlington, MA 02476 (781) 316-3050 Assessors@town.arlington.ma.us

**Abutters List** 

Date: January 26, 2021

Subject Property Address: 25 HENRY ST Arlington, MA

Subject Property ID: 118-1-3

Search Distance: 100 Feet

**CONSERVATION** 

The Board of Assessors certifies the names and addresses of requested parties in interest, all abutters within 100 feet of the property lines, of subject property.

Board of Assessors

**Abutters List** 

Date: January 26, 2021

Subject Property Address: 25 HENRY ST Arlington, MA

Subject Property ID: 118-1-3

Search Distance: 100 Feet

\_\_\_\_\_

Prop ID: 118-1-1

Prop Location: 0-LOT HENRY ST Arlington, MA Owner: TOWN OF ARLINGTON TAX POSS

Co-Owner: Mailing Address: 730 MASS AVE

ARLINGTON, MA 02476

\_\_\_\_\_

Prop ID: 118-1-2

Prop Location: 29 HENRY ST Arlington, MA

Owner: CARNEY JOHN A

Co-Owner: Mailing Address: 98 RICHFIELD RD ARLINGTON, MA 02474

-----

Prop ID 118-1-3

Prop Location: 25 HENRY ST Arlington, MA

**Owner: CARNEY JOHN A** 

Co-Owner: Mailing Address: 98 RICHFIELD RD ARLINGTON, MA 02474

.....

Prop ID: 118-1-4

Prop Location: 8 ELWERN RD Arlington, MA

Owner: BAILEY JOSHUA D Co-Owner: YAO SEN Mailing Address: 8 ELWERN RD

ARLINGTON, MA 02476

Prop ID: 118-1-5

Prop Location: 12 ELWERN RD Arlington, MA Owner: ZAMIEROWSKI NANCY A /TRUSTEE Co-Owner: NANCY A ZAMIEROWSKI 2015 TRUST

Mailing Address: 12 ELWERN ROAD ARLINGTON, MA 02474

------

Prop ID: 118-1-6

Prop Location: 16 ELWERN RD Arlington, MA

Owner: MERCHANT ALI A/SORAYA

Co-Owner: Mailing Address: 16 ELWERN ROAD ARLINGTON, MA 02474

-----

Prop ID: 118-4-11.A

Prop Location: 28 HENRY ST Arlington, MA

Owner: BLOCK THOMAS C Co-Owner: POOLE DOROTHY L

Mailing Address: 28 HENRY ST

ARLINGTON, MA 02474

Prop ID: 118-4-12.A

Prop Location: 32 HENRY ST Arlington, MA

Owner: ROY LAURA S/TRUSTEE

Co-Owner: LOUISE ROUTENBERG FAMILY TRUST

Mailing Address: 32 HENRY ST

ARLINGTON, MA 02474

-----

Prop ID: 118-4-8

Prop Location: 16 HENRY ST Arlington, MA

Owner: DERVISHIAN DONNA J Co-Owner: ALDRED STEPHEN J

Mailing Address: 16 HENRY ST

ARLINGTON, MA 02474

-----

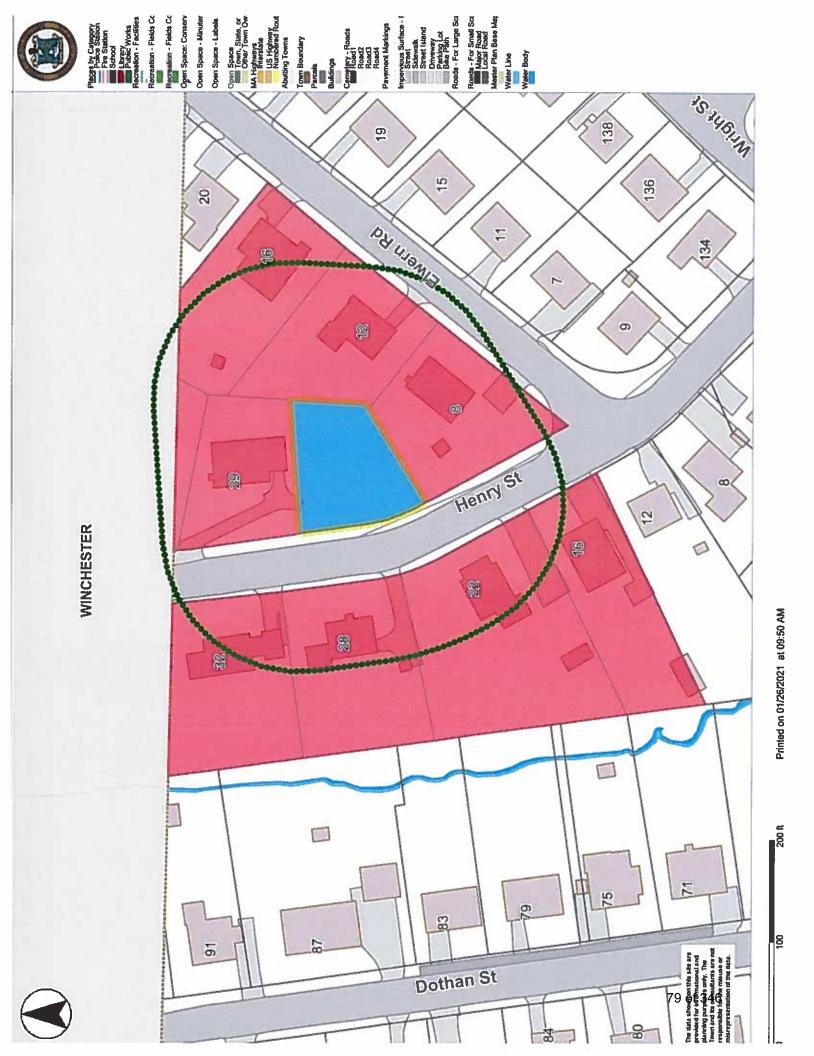
Prop ID: 118-4-9

Prop Location: 22 HENRY ST Arlington, MA

Owner: MORINA EKATERINA A Co-Owner: MAHREMOV METIN M

Mailing Address: 22 HENRY ST

ARLINGTON, MA 02474



#### Notification to Abutters Under the Massachusetts Wetlands Protection Act And Arlington Wetlands Protection Bylaw

In accordance with the second paragraph of Massachusetts General Laws Chapter 131, Section 40, and the Arlington Wetlands Protection Bylaw, you are hereby notified of the following:

In accordance with the second paragraph of Massachusetts General Laws Chapter 131, Section 40, and the Arlington Wetlands Protection Bylaw, you are hereby notified of the following:

The Conservation Commission will hold a virtual public meeting using Zoom, on <a href="Thursday">Thursday</a>, February 18th at 7:45 pm in accordance with the provisions of the Mass. Wetlands Protection Act (M.G.L. Ch. 131, s. 40, as amended), the Town of Arlington Bylaws Article 8, Bylaw for Wetland Protection, and in accordance with the Governor's Order Suspending Certain Provisions of the Open Meeting Law, G. L. c. 30A, § 20 relating to the COVID-19 emergency, for a Request for Determination of Applicability from John Carney, for The construction of a new family single dwelling at 25 Henry St., within 200 feet of a Riverfront, on Assessor's Property Map/s #\_\_118\_\_\_\_, Lot/s #\_\_\_3\_\_\_. Please refer to the Commission's online meeting agenda for specific Zoom meeting access information.

A copy of the application and accompanying plans are available by request by contacting the Arlington Conservation Agent at 781-316-3012 or <a href="mailto:esullivan@town.arlington.ma.us">esullivan@town.arlington.ma.us</a>. For more information call the applicant's representative at <a href="mailto:978-204-2390">978-204-2390</a> or the Arlington Conservation Commission at 781-316-3012, or the DEP Northeast Regional Office at 978-694-3200.

NOTE: Notice of the Public Hearing will be published at least five (5) business days in advance in *The Arlington Advocate* and will also be posted at least 48 hours in advance in the Arlington Town Hall.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

The meeting information for your hearing is:

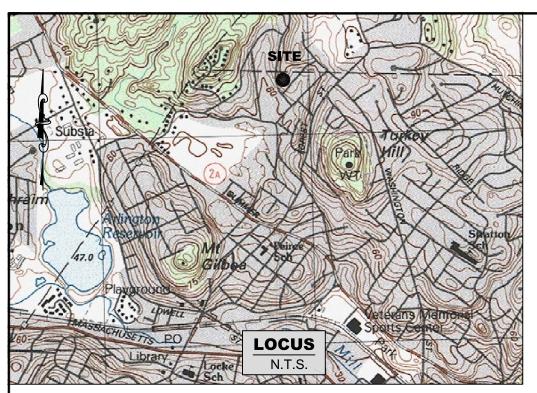
Date: 2/18/21

Time: 7:45

#### **Affidavit of Service**

(Please return to Conservation Commission)

I, being duly sworn, do hereby state as follows: on Z/3/2/, I mailed a "Notification to Abutters" in compliance with the second paragraph or Massachusetts General Laws, Chapter 131, s.40, the DEP Guide to Abutter Notification dated April 8, 1994, and the Arlington Wetlands Protection Bylaw, Title V, Article 8 of the Town of Arlington Bylaws in
connection with the following matter:
[Brief description of work and address of work.]  Construction of a Single family home  25 Henry St.  The form of the notification, and a list of the abutters to whom it was provided and their addresses, are attached to this Affidavit of Service.
Signed under the pains and penalties of perjury, this Bolday of February  Name



GENERAL CONSTRUCTION NOTES:

1. DISTURBED SOILS SHOULD BE STABILIZED AS SOON AS POSSIBLE. ADEQUATE MEASURES SHOULD BE TAKEN TO PREVENT EROSION AND TO CONTAIN SEDIMENT ON SITE. EROSION CONTROLS SUCH AS SILT FENCING, HAYBLES, AND SWEEPING SHOULD BE USED AS NECESSARY.

2. THE PROPOSED CURB CUT AND SIDEWALK CONSTRUCTION SHOULD BE COORDINATED WITH TOWN OF ARLINGTON ENGINEERING DEPT. AND BUILT IN COMPLIANCE WITH THE TOWN OF ARLINGTON STANDARD DRIVEWAY CROSSING AND SIDEWALK DETAILS.

3. ALL WALLS GREATER THAN 4' IN HEIGHT SHALL BE DESIGNED BY A REGISTERED STRUCTURAL ENGINEER PRIOR TO CONSTRUCTION.

4. FALL PROTECTION AND HANDRAILS SHALL BE PROVIDED AS REQUIRED BY BUILDING CODE OR OTHER APPLICABLE CODE(S) OR REGULATION(S), AND SHALL BE APPROVED BY THE OWNER PRIOR TO INSTALLATION.

5. SITE GRADING AND DOWNSPOUT OVERFLOWS SHALL NOT DIRECT CONCENTRATED STORMWATER RUNOFF ONTO ABUTTING PROPERTIES.

6. THE CONTRACTOR SHOULD MONITOR AREAS OF EXPOSED SOIL TO INSURE THAT EROSION IS KEPT TO A MINIMUM AND SEDIMENT IS CONTAINED ON—SITE. ANY SEDIMENT ENTERING THE RIGHT OF WAY SHOULD BE REMOVED IMMEDIATELY. ROADWAY STREET SWEEPING AND/OR CLEANING SHOULD TAKE PLACE AT THE END OF EACH WORK DAY.

7. THE DESIGN ENGINEER SHALL PROVIDE A STAMPED FIELD AS-BUILT PLAN OF THE DRAINAGE SYSTEM AND IMPERVIOUS AREAS (w/ DIMENSIONS) D TO THE ARLINGTON ENGINEERING DEPT. FOLLOWING INSTALLATION.

8. ANY PROPOSED AND/OR FUTURE SUMP PUMP INSTALLATION SHOULD NOT BE DISCHARGED TOWARDS THE PUBLIC WAY OR CONNECTED TO THE SUBSURFACE RECHARGE SYSTEM.

9. FOOTING DRAIN OUTFALLS SHALL NOT BE DIRECTED TOWARDS ABUTTING PROPERTIES OR CONNECTED TO THE SUBSURFACE RECHARGE SYSTEM.

10. THE CONTRACTOR SHALL COORDINATE THE FOLLOWING INSPECTIONS OF SUBSURFACE DRAINAGE SYSTEM WITH THE DESIGN ENGINEER AND THE TOWN OF ARLINGTON ENGINEERING DEPT.; (A.) THE BOTTOM OF EXCAVATION (B.) SYSTEM INSPECTION AFTER INSTALLATION AND PRIOR TO BACKFILLING.

11. THE INFILTRATION SYSTEM'S BOTTOM OF BED SHALL BE EXCAVATED TO THE C HORIZON SOIL LAYER NOTED ON THE TEST PITS. IF THE SOIL CONDITIONS ENCOUNTERED DO NOT MATCH THE PLAN OR TEST PIT INFORMATION, (IE LEDGE, LACK OF SOIL DEPTH ETC.) THE CONTRACTOR SHOULD CONTACT THE DESIGNER AND ENGINEERING

GENERAL UTILITY NOTES

1. THE LOCATION OF EXISTING UTILITIES INCLUDING PIPES, CONDUITS, MANHOLES, POLES, AND OTHER UTILITY FEATURES AS SHOWN ON THESE PLANS ARE NOT WARRANTED TO BE CORRECT OR COMPLETE.

CONTRACTOR SHALL VERIFY UTILITIES AND NOTIFY DIGSAFE AND THE TOWN OF ARLINGTON WATER & SEWER DEPT. (781-316-3310) PRIOR TO ANY EXCAVATIONS.

2. INSTALLATION OF UTILITIES SHALL CONFORM TO ALL APPLICABLE REGULATIONS, CODES, AND STANDARDS, INCLUDING THOSE OF THE CITY OF ARLINGTON.

3. THIS PLAN PROVIDES INFORMATION FOR EXTERIOR UTILITIES ONLY. UTILITIES INSIDE THE BUILDING TO BE DESIGNED AND SPECIFIED BY OTHERS.

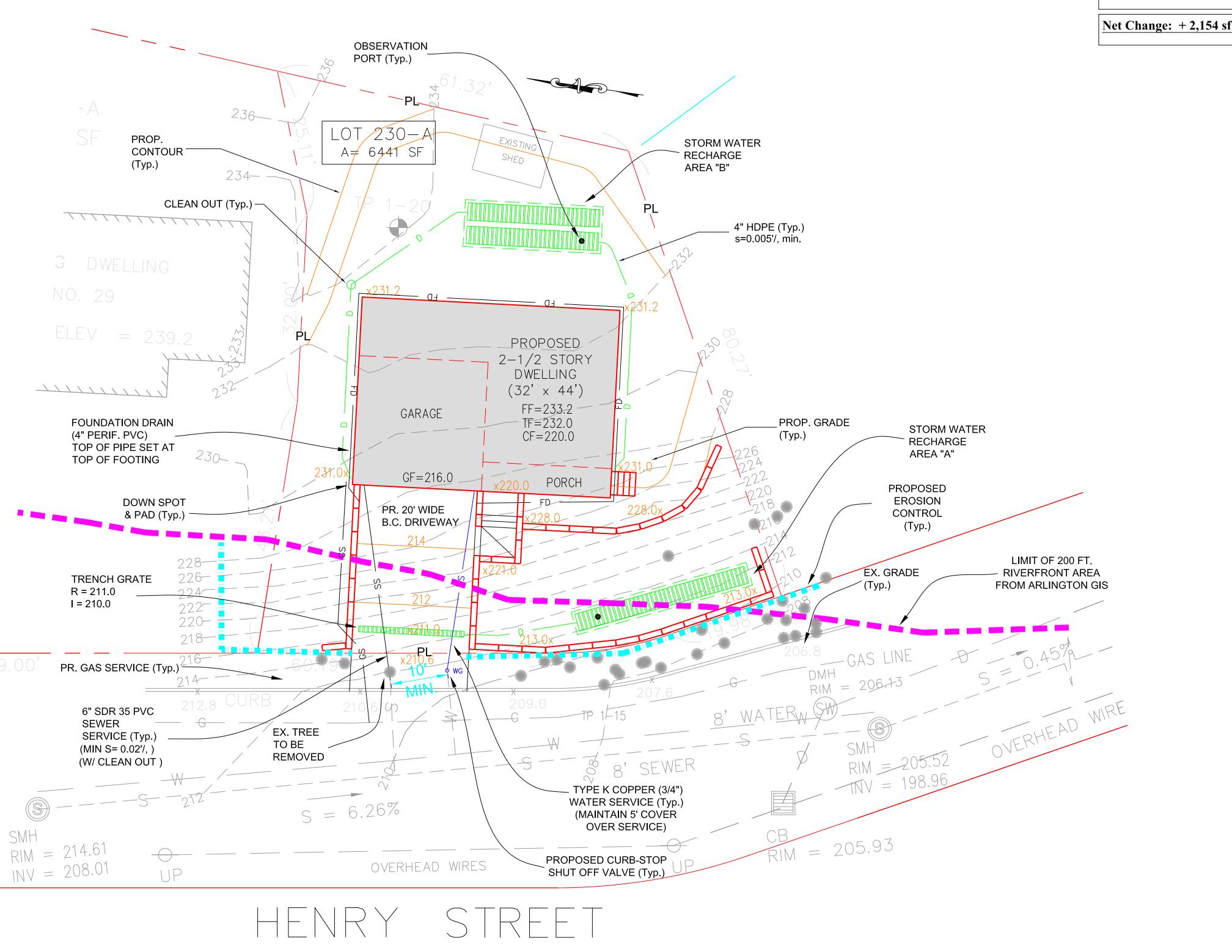
SOIL PIT I	_OG
DEEP HOLE	1-20
DATE	11/5/20
GROUND ELEV.	234.0
BOTTOM OF PIT ELEV.	227.0
OBS. WATER TABLE	N/A
EST. S.H. WATER TABLE	>84"(227.0)
O HORIZON	N/A
A HORIZON	0"- 8" S.L. 10YR 4/2 Gran., VF
B HORIZON	8"- 16" S.L. 10YR 7/6 Gran., VF
C HORIZON	16"- 84" S.L. 2.5Y 7/2 Gran., Firm in place
REFUSAL	
CONDUCTED BY:	*
JOHN BARROWS - MA S	E #84

### STORM WATER PEAK FLOW COMPARISON

Design Poi	nt		Peak Flows (CFS) Storm Events						
		<u>2 YR</u>	<u>10 YR</u>	25 YR	<u>100 YR</u>				
Α	Existing	0.0	0.0	0.0	0.1				
	Proposed	0.0	0.0	0.0	0.3				

### STORM WATER VOLUME COMPARISON

Design Point	i		Volumes (CF) Storm Events					
		<u>2 YR</u>	<u>10 YR</u>	<u>25 YR</u>	<u>100 YR</u>			
Α	Existing	8	127	248	603			
	Proposed	3	76	174	541			



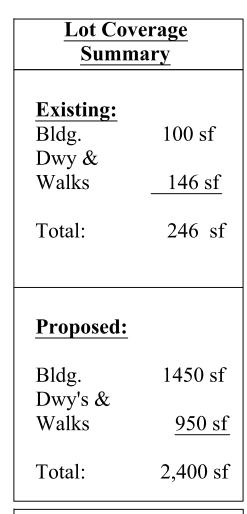
SITE PLAN

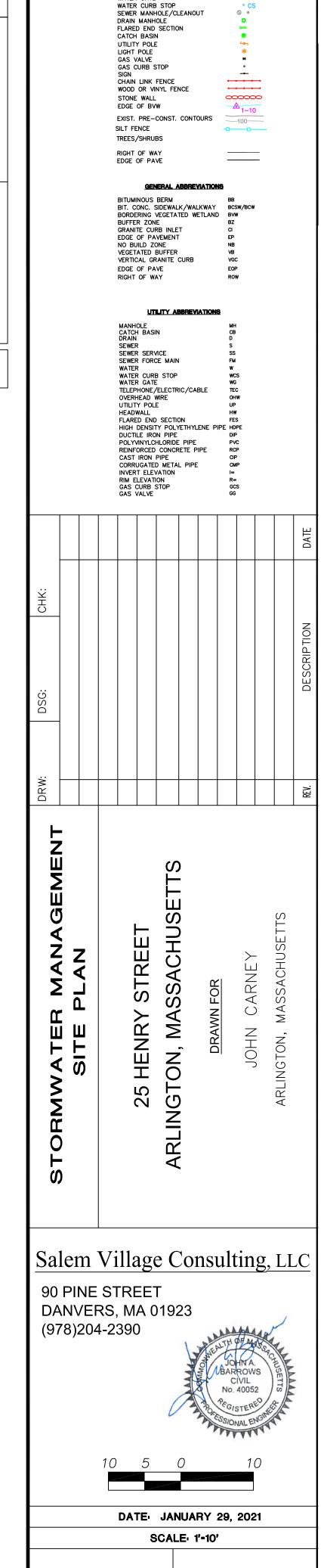
SCALE: 1'=10'

1. PROPERTY LINE, EXISTING CONDITIONS, UTILITY

BY: D&A SURVEY INC., DATED: 11/20/20

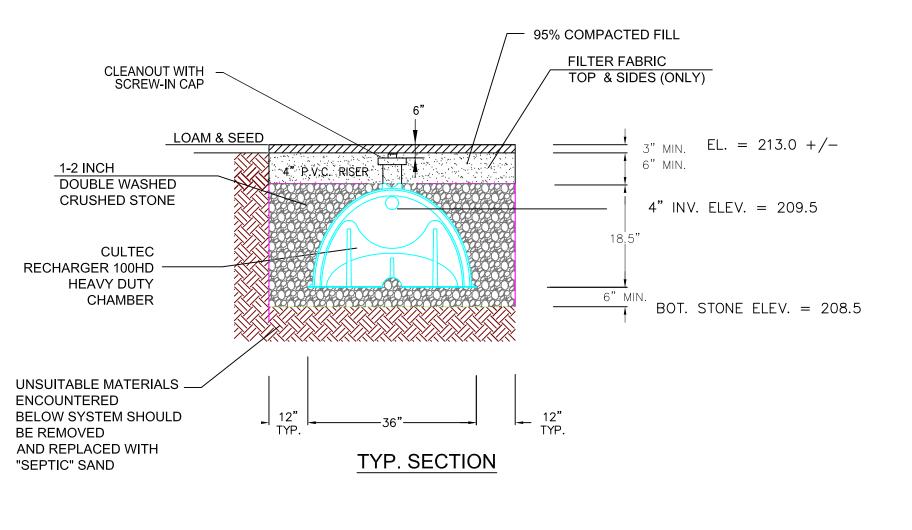
AND SITE DEVELOPMENT INFORMATION FROM PLAN

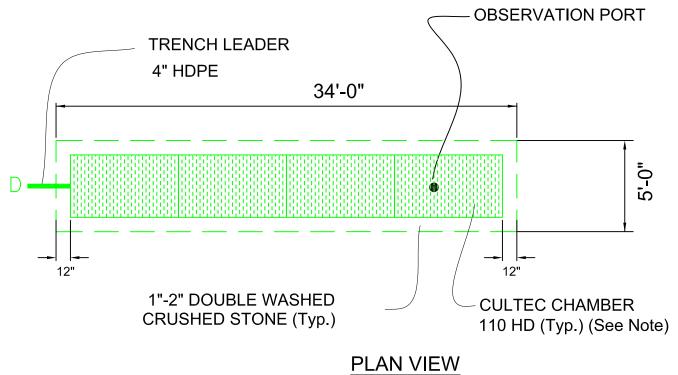




1 OF 2

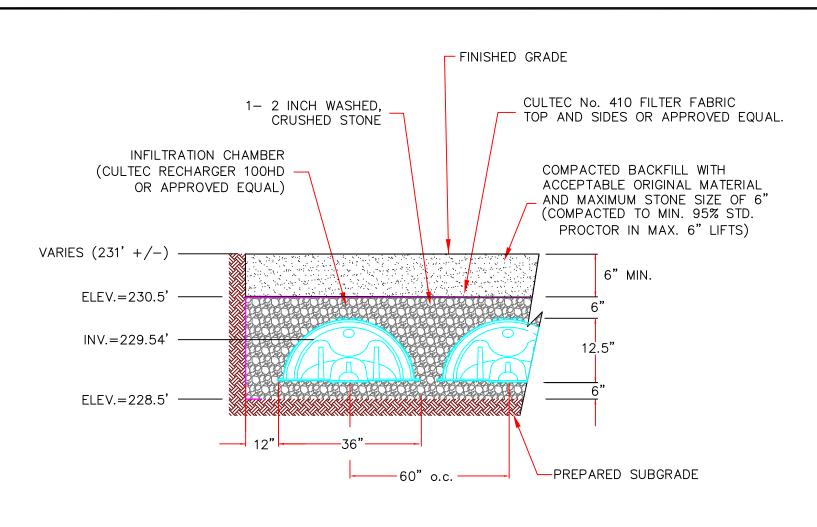
SHEET

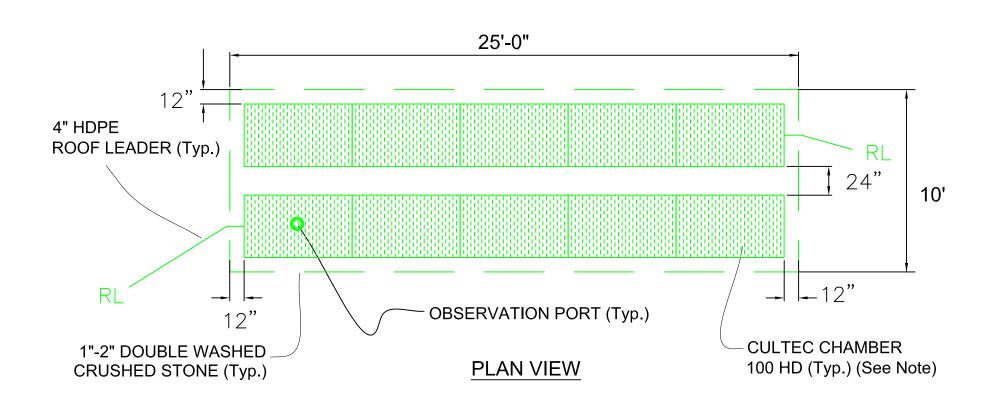




### RECHARGE SYSTEM "A"

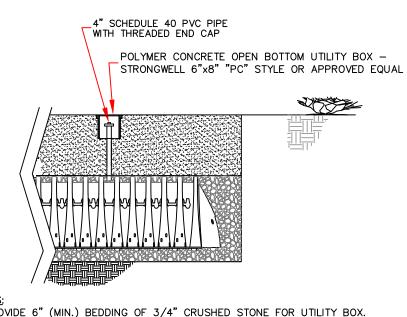
1. RECHARGE SYSTEM CONSISTS OF (4) FOUR 100 HD CULTEC CHAMBERS. 2. THE STORAGE VOLUME PROVIDED BY THE RECHARGE AREA = 173 C.F.





# RECHARGE SYSTEM "B"

1. RECHARGE SYSTEM CONSISTS OF (6) SIX 100 HD CULTEC CHAMBERS. 2. THE STORAGE VOLUME PROVIDED BY THE RECHARGE AREA = 249 C.F.



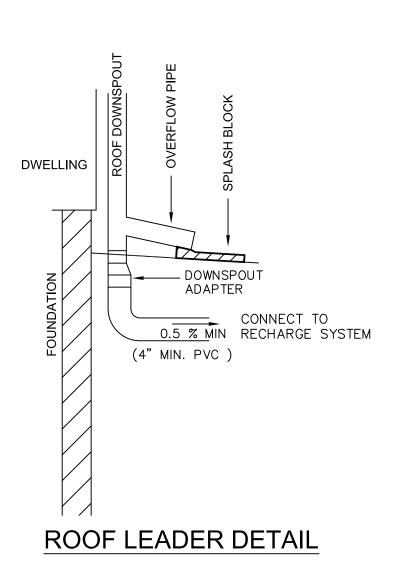
NOTES:

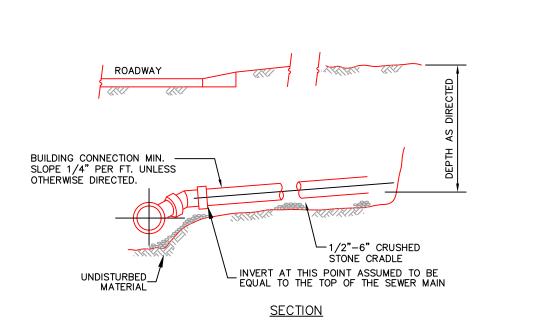
1. PROVIDE 6" (MIN.) BEDDING OF 3/4" CRUSHED STONE FOR UTILITY BOX.

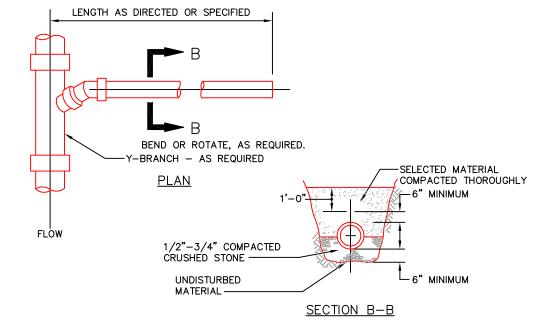
2. PROVIDE ONE INSPECTION PORT AT EACH END OF EACH CHAMBER ROW.

**INSPECTION PORT DETAIL** 

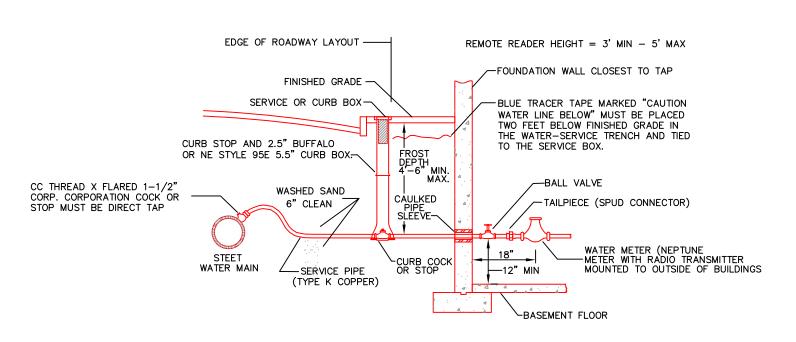
N.T.S.





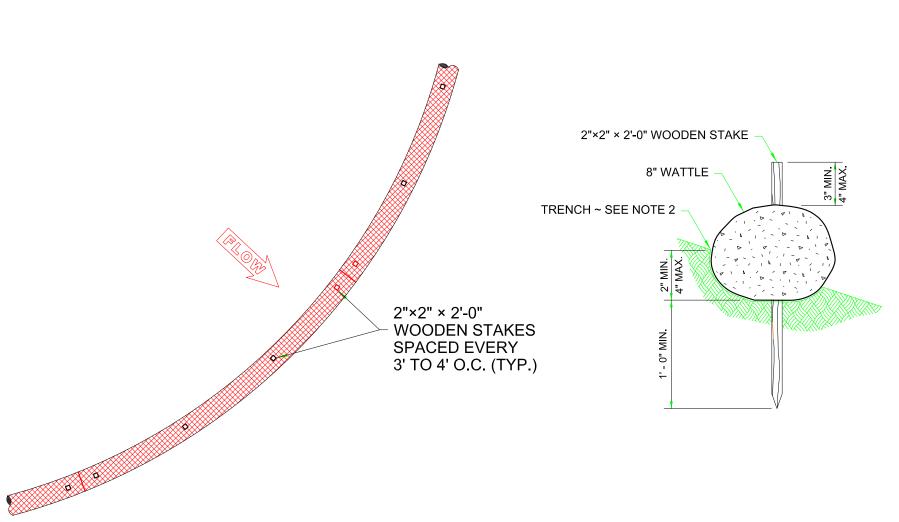


# TYPICAL BUILDING SEWER CONNECTION



# TYPICAL DOMESTIC WATER SERVICE CONNECTION

N.T.S.



### STRAW WATTLE EROSION CONTROL DETAILS

N.T.S.

1, WATTLES TO BE MAINTAINED ALONG STREET LINE AND THE NORTH AND SOUTH PROPERTY LINES DURING CONSTRUCTION. 2. WHEN UNABLE TO TTENCH AND/OR STAKE, WATTLES SHOULD BE BACKED WITH GRAVEL.

# **GENERAL UTILITY NOTES** THE LOCATION OF EXISTING UTILITIES INCLUDING PIPES, CONDUITS, MANHOLES, POLES, AND OTHER UTILITY FEATURES AS SHOWN ON THESE PLANS ARE NOT WARRANTED TO BE CORRECT OR COMPLETE. CONTRACTOR SHALL VERIFY UTILITIES AND NOTIFY DIGSAFE AND THE TOWN OF ARLINGTON WATER & <u>SEWER DEPT. (781-316-3310) PRIOR TO ANY</u> EXCAVATIONS. 2. INSTALLATION OF UTILITIES SHALL CONFORM TO ALL APPLICABLE REGULATIONS, CODES, AND STANDARDS, INCLUDING THOSE OF THE CITY OF 3. THIS PLAN PROVIDES INFORMATION FOR EXTERIOR UTILITIES ONLY. UTILITIES INSIDE THE BUILDING TO BE DESIGNED AND SPECIFIED BY OTHERS.

WATER CURB STOP SEWER MANHOLE/CLEANOUT

DRAIN MANHOLE FLARED END SECTION

### STORMWATER REPORT

# PROPOSED SINGLE FAMILY RESIDENCE

25 HENRY STREET ARLINGTON, MASSACHUSETTS

Prepared for;
JOHN CARNEY

Prepared by;
Salem Village Consulting, LLC
90 PINE STREET
DANVERS, MA 01923

January 29, 2021

#### Narrative

#### 1.0 Introduction and Background

The following report details a storm water analysis completed for a proposed singlefamily home site located on Henry Street in Arlington, Massachusetts (refer to Figure 1: USGS Locus Map). The change to the property will result in an increase in impervious surfaces by more than 350 s.f. and is therefore required to meet Arlington's Storm Water Mitigation Bylaw (Art. 15). This study will provide a comparative analysis of the hydrologic characteristics of the pre- vs. post-development conditions of the site and provide information on the rate of surface water runoff generated by the project.

#### 2.0 Existing Conditions

The site is located on the east side of the public roadway Henry St. approximately 200 feet north of Elwern St. The property is bounded by Henry St. to the west and residential use properties to the north, east, and south. The subject property is located in the R-1 zoning district and has a land area of 6,441 square feet. The property is primarily undeveloped and was recently subdivided from 29 Henry St. There is presently approximately 250 s.f of impervious surfaces from an existing shed and pavement. The slopes on the property range between 10 and 60 percent with the grades dropping from the highest elevations at the northeast boundary to the western boundaries Henry St. Figure 2 represents the existing topographic conditions at the site.

Based on information available from the USDA Conservation Service the underlying soils at the site are those typical of the Charlton Urban Land Complex. These soils are considered to be in the Hydrologic Soil Group "A". Information on the site's soils has been included in the report's appendix.

### 3.0 Project Description

The project proposes the construction of a 32' by 44' (1,450 s.f.) single family dwelling. Other impervious surfaces that will be created as part of the development includes a walk and driveway to access a two-car garage. When completed the new building site will have approximately 2,400 s.f. of impervious surfaces. The project will also include two stormwater recharge systems. The proposed dwelling will include a roof drainage system of roof gutters and downspouts. The roof drainage will be directly piped to a storm water recharge system. The driveway will be constructed with a trench grate connected to a second recharge system. Information on the site development and the design of the recharge system has been included in the appendix of this report.

#### 4.0 Peak Flow Runoff Rates

Peak flow rates were studied under existing and proposed conditions for the 2, 10, 25, & 100 year, 24-hour Type III storm events. Two points of comparisons or study point (as described below in Table 1 and as shown in Figures 2 and 3) were developed and studied in an effort to micro-analyze runoff rates to the abutting properties and roadway. The study points were consistent between pre- and post-development conditions.

**Study Point Description** Flows from the site to Henry St. A

TABLE 1: STUDY POINT OF COMPARISON

For both pre- and post-development conditions, the site was divided into subcatchment areas based on topography, drainage patterns, and "POC's". One subcatchment (E-1) was utilized to study pre-development conditions, and one subcatchments (P-1) was utilized to study post-development conditions (refer to Figures 2 and 3, in the report's appendix). Subcatchment P-2 & P-3 were utilized to determine the performance of the stormwater recharge systems. These subcatchments were made up of the impervious surfaces of the dwelling's roof and driveway that will drain to the recharge systems.

Technical Release 55 (TR-55) was utilized to obtain weighted curve numbers (CNs) for each of the pre- and post-development subcatchment areas. Inputs for obtaining the weighted CNs were based on ground cover type and hydrologic soil group (HSG) soils classified by United States Department of Agriculture (USDA) soil survey data. Supporting information on the weighted curve numbers has been included in the report's appendix.

TR-55 was also utilized to obtain times of concentration (TCs) for each of the pre- and post-development subcatchment areas. Various flow paths were evaluated for each subcatchment area to determine the most hydrologically remote point within that subcatchment, which did not necessarily correspond to the longest flow path. Flow paths generally include a segment of sheet flow of up to 100 feet, segment(s) of shallow concentrated flow, and in some cases segment(s) of channel flow, with the sheet flow having the greatest impact on the TC. For each segment of flow, the length, slope, and cover type were entered to calculate the TC. The same methodology for calculating TC

was employed consistently between pre-and post development conditions. Refer to the attached TR-55 TC data. Since such small watersheds makes up the study areas a 6 minimum time of concentration was assumed for both the pre and post development condition.

CNs and TCs obtained from TR-55 were input into the Hydraflow® Hydrographs software package, which utilizes the National Resources Conservation Service (NRCS) (formerly "SCS") method to generate and route hydrographs. The resulting hydrographs have been included in the report's appendix.

The resulting analysis determines flows to the "POC's", as the post-development peak runoff rates do not exceed the pre-development peak runoff rates for the design storms. Table 2 (below) summarizes the attached *Hydraflow*<sup>®</sup> Hydrographs analysis.

**TABLE 2: RUNOFF COMPARISON** 

Design Poin	t		ows ) vents			
		<u> 2 YR</u>	<u> 10 YR</u>	<u> 25 YR</u>	<u>100 YR</u>	
A	Existing	0.0	0.0	0.0	0.1	
	Proposed	0.0	0.0	0.0	0.3	

#### 10.0 Conclusion

Based on the analysis performed the storm water mitigation (recharge systems) proposed will capture the additional stormwater generated from the proposed construction and their will be no increase in the storm water runoff from the site.

FIGURE 1 MASSACHUSETTS PO Library

### USGS LOCUS MAP

25 HENRY ST. ARLINGTON, MASSACHUSETTS

DRAWN FOR

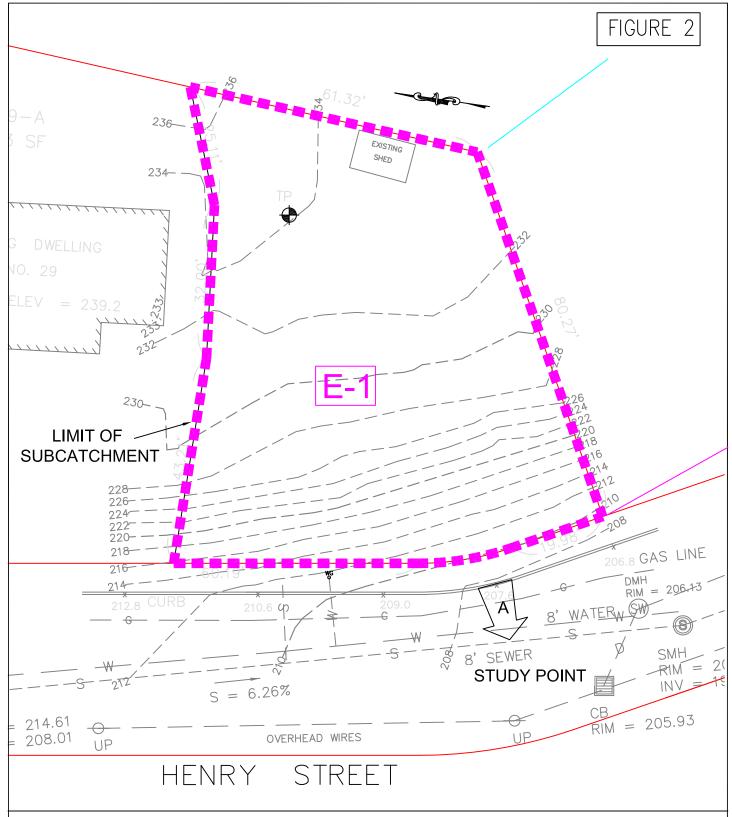
JOHN CARNEY
ARLINGTON, MASSACHUSETTS

Salem Village Consulting, LLC

90 PINE STREET DANVERS, MA. 01923 (978) 204-2390

DATE: JANUARY 2021

SCALE: 1"28006,346



### PRE-DEVELOPMENT SUBCATCHMENTS

25 HENRY ST. ARLINGTON, MASSACHUSETTS

DRAWN FOR
JOHN CARNEY

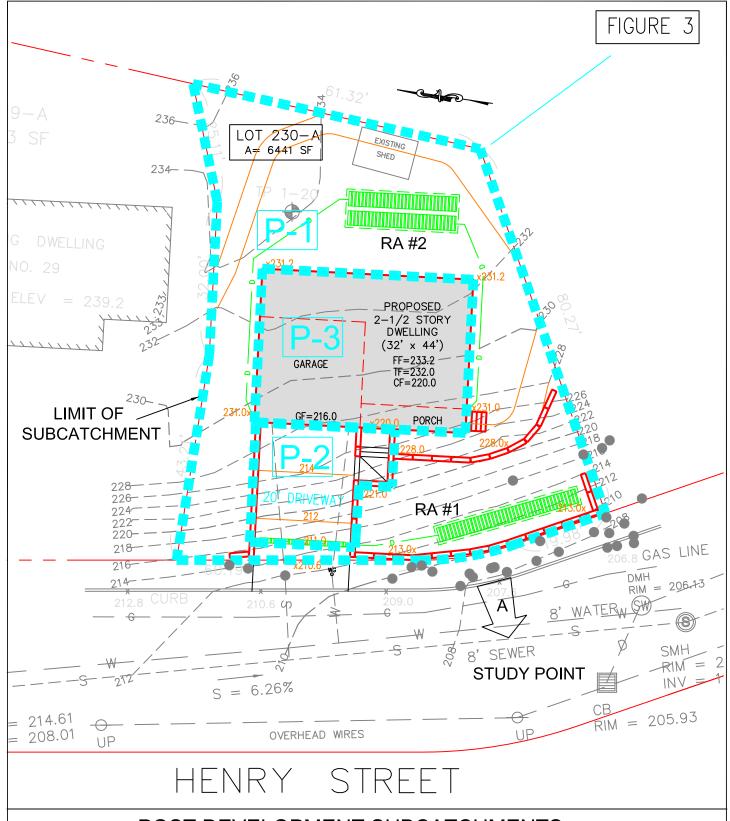
ARLINGTON, MASSACHUSETTS

Salem Village Consulting, LLC

90 PINE STREET DANVERS, MA. 01923 (978) 204-2390

DATE: JANUARY 2021

SCALE: 18929f 346



### POST DEVELOPMENT SUBCATCHMENTS

25 HENRY ST. ARLINGTON, MASSACHUSETTS

DRAWN FOR

JOHN CARNEY
ARLINGTON, MASSACHUSETTS

Salem Village Consulting, LLC

90 PINE STREET DANVERS, MA. 01923 (978) 204-2390

DATE: JANUARY 2021

SCALE: 19029f 346

### **APPENDIX**

SITE SOIL INFORMATION

**CURVE NUMBER COMPUTATIONS** 

HYDROGRAPH REPORTS

RECHARGE AREA CHARACTERISTICS

STORMWATER MANAGEMENT PLAN

### SITE SOIL INFORMATION



#### MAP LEGEND MAP INFORMATION The soil surveys that comprise your AOI were mapped at Area of Interest (AOI) С 1:25.000. Area of Interest (AOI) C/D Soils Warning: Soil Map may not be valid at this scale. D **Soil Rating Polygons** Enlargement of maps beyond the scale of mapping can cause Not rated or not available Α misunderstanding of the detail of mapping and accuracy of soil **Water Features** line placement. The maps do not show the small areas of A/D Streams and Canals contrasting soils that could have been shown at a more detailed Transportation B/D Rails ---Please rely on the bar scale on each map sheet for map measurements. Interstate Highways C/D Source of Map: Natural Resources Conservation Service **US Routes** Web Soil Survey URL: D Major Roads Coordinate System: Web Mercator (EPSG:3857) Not rated or not available -Local Roads Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts Soil Rating Lines Background distance and area. A projection that preserves area, such as the Aerial Photography Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required. This product is generated from the USDA-NRCS certified data as of the version date(s) listed below. Soil Survey Area: Middlesex County, Massachusetts Survey Area Data: Version 20, Jun 9, 2020 Soil map units are labeled (as space allows) for map scales 1:50.000 or larger. Not rated or not available Date(s) aerial images were photographed: Sep 11, 2019—Oct 5. 2019 **Soil Rating Points** The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background A/D imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident. B/D

### **Hydrologic Soil Group**

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
629C	Canton-Charlton-Urban land complex, 3 to 15 percent slopes	A	0.6	45.2%
631C	Charlton-Urban land- Hollis complex, 3 to 15 percent slopes, rocky	A	0.7	54.8%
Totals for Area of Inter-	est	1	1.2	100.0%

#### **Description**

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

### **Rating Options**

Aggregation Method: Dominant Condition
Component Percent Cutoff: None Specified

Tie-break Rule: Higher

#### Middlesex County, Massachusetts

# 631C—Charlton-Urban land-Hollis complex, 3 to 15 percent slopes, rocky

#### **Map Unit Setting**

National map unit symbol: vr1g Elevation: 0 to 1,000 feet

Mean annual precipitation: 32 to 54 inches Mean annual air temperature: 43 to 54 degrees F

Frost-free period: 110 to 240 days

Farmland classification: Not prime farmland

#### **Map Unit Composition**

Charlton and similar soils: 45 percent

Urban land: 35 percent

Hollis and similar soils: 10 percent Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

#### **Description of Charlton**

#### Setting

Landform: Drumlins, ground moraines

Landform position (two-dimensional): Backslope Landform position (three-dimensional): Side slope

Down-slope shape: Linear Across-slope shape: Convex

Parent material: Friable loamy eolian deposits over friable loamy

basal till derived from granite and gneiss

#### Typical profile

H1 - 0 to 5 inches: fine sandy loam H2 - 5 to 22 inches: sandy loam

H3 - 22 to 65 inches: gravelly sandy loam

#### Properties and qualities

Slope: 3 to 15 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None Frequency of ponding: None

Available water capacity: Moderate (about 7.3 inches)

#### Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: A

Ecological site: F144AY034CT - Well Drained Till Uplands

Hydric soil rating: No

#### **Description of Urban Land**

#### Setting

Landform position (two-dimensional): Footslope Landform position (three-dimensional): Base slope

Down-slope shape: Linear Across-slope shape: Linear

Parent material: Excavated and filled land

#### **Description of Hollis**

#### Setting

Landform: Ridges, hillslopes

Landform position (two-dimensional): Backslope Landform position (three-dimensional): Side slope

Down-slope shape: Linear Across-slope shape: Convex

Parent material: Friable, shallow loamy basal till over granite and

gneiss

#### **Typical profile**

H1 - 0 to 2 inches: fine sandy loam
H2 - 2 to 14 inches: fine sandy loam
H3 - 14 to 18 inches: unweathered bedrock

#### **Properties and qualities**

Slope: 3 to 15 percent

Surface area covered with cobbles, stones or boulders: 9.0 percent

Depth to restrictive feature: 8 to 20 inches to lithic bedrock

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Very low

to moderately low (0.00 to 0.14 in/hr) Depth to water table: More than 80 inches

Frequency of flooding: None Frequency of ponding: None

Available water capacity: Very low (about 2.0 inches)

#### Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: D

Ecological site: F144AY033MA - Shallow Dry Till Uplands

Hydric soil rating: No

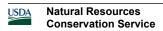
#### **Minor Components**

#### Canton

Percent of map unit: 4 percent

Landform: Hills

Landform position (two-dimensional): Backslope, toeslope Landform position (three-dimensional): Side slope, base slope



Down-slope shape: Linear Across-slope shape: Convex Hydric soil rating: No

#### **Udorthents, loamy**

Percent of map unit: 2 percent Hydric soil rating: No

#### **Rock outcrop**

Percent of map unit: 2 percent

Landform: Ledges

Landform position (two-dimensional): Summit Landform position (three-dimensional): Head slope

Down-slope shape: Concave Across-slope shape: Concave

#### **Scituate**

Percent of map unit: 1 percent Landform: Depressions, hillslopes

Landform position (two-dimensional): Toeslope, summit

Landform position (three-dimensional): Base slope, head slope

Down-slope shape: Linear Across-slope shape: Concave

Hydric soil rating: No

#### **Montauk**

Percent of map unit: 1 percent

Landform: Hillslopes

Landform position (two-dimensional): Shoulder, summit

Landform position (three-dimensional): Nose slope, head slope

Down-slope shape: Convex Across-slope shape: Convex Hydric soil rating: No

#### **Data Source Information**

Soil Survey Area: Middlesex County, Massachusetts

Survey Area Data: Version 20, Jun 9, 2020

Commonwealth of Massachusetts City/Town of

**Suitability Assessment** Form 11 - Soil

C. On-Site Review (continued)

Deep Observation Hole Number:

Other Consistence (Moist) 4 Soil J. Structure Ź SZ. Soil Cobbles & Stones とり Coarse Fragments % by Volume 00 Gravel Soil Texture (USDA) シグ Percent Redoximorphic Features (mottles) Color Depth Soil Horizon/ Soil Matrix: Color-Layer Moist (Munsell) Depth (in.)

か)、あるかのは、西でして Barrows, d. Additional Notes:

### **CURVE NUMBER COMPUTATIONS**

Project 25 HE	NZY ST.	By 78 Date 1/29/2				
Location APLING	intoN	Checked Date				
Check one: Prese	nt Developed "E-1"	,				
1. Runoff curve n	umber					
Soil name and hydrologic	Cover description	CN <sup>1</sup>	Are	ea Product of CN x area		
group			2 5	7. Da	agait.	
(appendix A)	(cover type, treatment, and hydrologic conc impervious; unconnected/connected impervious		Table 2-2 Figure 2-3	Figure 2-4		
	IMPERVIOU	S	98	D.	0,98	
A	OPEN SPACE (	(4000)	39	0.1	4 5.46	
1/ Use only one CN source	e per line		Total	s 🏚 0/	156.44	
CN (weighted) = _total	product = 6.44 =	42.9	Use CN		12	
tota	al area 0.15		USE CN	7 17		
2. Runoff				T.		
		Storm #1	Stor	m #2	Storm #3	
Frequency	yr					
Rainfall, P	(24-hour) in					
	in d CN with table 2-1, figure 2-1, or				4	
1	-3 and 2-4)					

Project 25HE	AVRY ST.	Ву				Date //29/2/						
Location	LINGTON		Checked				Date					
Check one: Prese	Check one: Present Developed "FILE"											
1. Runoff curve number												
Soil name and hydrologic	Cover descrip	otion			CN <sup>1</sup>	<i>J</i>	Area	Product of CN x area				
group (appendix A)	(cover type, treatment, and hydrolog impervious; unconnected/connected			Table 2-2	Figure 2-3	Figure 2-4	□acres □mi <sup>2</sup> □%					
	IKARAWARA	yd A Comment		92	IE .	ш.	2.005	0/19				
4	110 17 Completes	965		10		C	77-5	041				
4	OPEN SPACE	(6	has)	39	•		0,10	3,90				
							517					
					•							
r								·				
3												
1/ Use only one CN source	ce per line				otal		1 100	429				
					Otal	5	01100	710/				
CN (weighted) = _tota	$\frac{\text{d product}}{\text{tal area}} = \frac{4.39}{0.105}$	_=_	41.8	Use	CN	•	42	2				
2. Runoff												
			Storm #1		Stor	m #2	8	Storm #3				
Frequency	y	yr										
Rainfall, F	? (24-hour)	in										
	nd CN with table 2-1, figure 2-1, or	in										
	2-3 and 2-4)											

Project 25 HE	NRY ST	Ву 7/3	By 7/3				Date //29/2/			
Location ATZW	NEY ST	Checked		Da	Date					
	ent Developed 1 P.	2" (	DEN	EM	VAY	)				
1. Runoff curve number										
Soil name and hydrologic	Cover description	Cover description CN 1/				rea	Product of CN x area			
group	(cover type, treatment, and hydrologic of	andition: percent	5-5	9 2-3		acres				
(appendix A)	impervious; unconnected/connected imp		Table 2-2	Figure 2-3	Figure	mi <sup>2</sup> %				
	IMPERVIOU	5	98		0.	015				
		han								
							1 1 1			
1/										
<sup>1</sup> / Use only one CN source	e per line		To	otals	<b>&gt;</b> 0	:0/5				
CN (weighted) = tota	product ==	:;	llee	CN 📦		0/9	7			
tot	al area		USE	CN ,		f Com				
2. Runoff			<del>- 1</del>							
		Storm #1		Storm	#2	St	orm #3			
Frequency	/ yr									
Rainfall, P	(24-hour) in									
	in d CN with table 2-1, figure 2-1, or									
	2-3 and 2-4)									

Project 25 HE	VRY ST.	By JB				Date 1/29/2/		
Location A-RLI	NRY ST.		Checked				Date	//
Check one: Preser	nt Developed	P.	3" (	Loc	F	)		
1. Runoff curve n	umber							
Soil name and hydrologic	Cover descrip	tion			CN <sup>1</sup>	/	Area	Product of CN x area
group	(cover type, treatment, and hydrolog	nic cond	lition: percent	2-5	Figure 2-3	Figure 2-4	□ acres	
(appendix A)	impervious; unconnected/connected			Table 2-2	Figur	Figur	□mi <sup>2</sup> □%	
				98			0.03	
1/ Use only one CN source	e per line			Т	otals	<b>•</b>	0.03	
CN (weighted) = total total	product =al area	_=_	;	Use	CNI	•	98	
2. Runoff		r						
		-	Storm #1		Storr	m #2		Storm #3
Frequency		yr .						
		in .						
P	d CN with table 2-1, figure 2-1, or	in [		*				

### HYDROGRAPH REPORTS

# **Hydrograph Return Period Recap**

Hydraflow Hydrographs by Intelisolve v9.2

yd.	Hydrograph Inflow Peak Outflow (cfs)								Hydrograph		
0.	type (origin)	Hyd(s)	1-Yr	2-Yr	3-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr	description
	SCS Runoff			0.001			0.010	0.030		0.135	E-1
	SCS Runoff			0.000			0.005	0.017		0.082	P-1
	SCS Runoff			0.047			0.068	0.081		0.107	P-2
	SCS Runoff			0.093			0.136	0.161		0.213	P-3
	Reservoir	3		0.000			0.000	0.000		0.005	Chamber Sys A
	Reservoir	4		0.000			0.000	0.019		0.221	Chamber Sys B
	Combine	2, 5, 6		0.000			0.005	0.031		0.301	Flow to SP-A

Proj. file: hydro Henry St.gpw

Monday, Feb 1, 2021

# **Hydrograph Summary Report**

Hydraflow Hydrographs by Intelisolve v9.2

							Hydranow Hydrographs by Intelisoive			
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description	
1	SCS Runoff	0.001	1	1324	8				E-1	
2	SCS Runoff	0.000	1	1324	3				P-1	
3	SCS Runoff	0.047	1	724	161				P-2	
4	SCS Runoff	0.093	1	724	322				P-3	
5	Reservoir	0.000	1	655	0	3	209.20	56.2	Chamber Sys A	
6	Reservoir	0.000	1	605	0	4	229.47	126	Chamber Sys B	
7	Combine	0.000	1	1324	3	2, 5, 6			Flow to SP-A	
hyd	nydro Henry St.gpw Return Period: 2 Year Monday, Feb 1, 2021					108 of 346 9b 1, 2021				

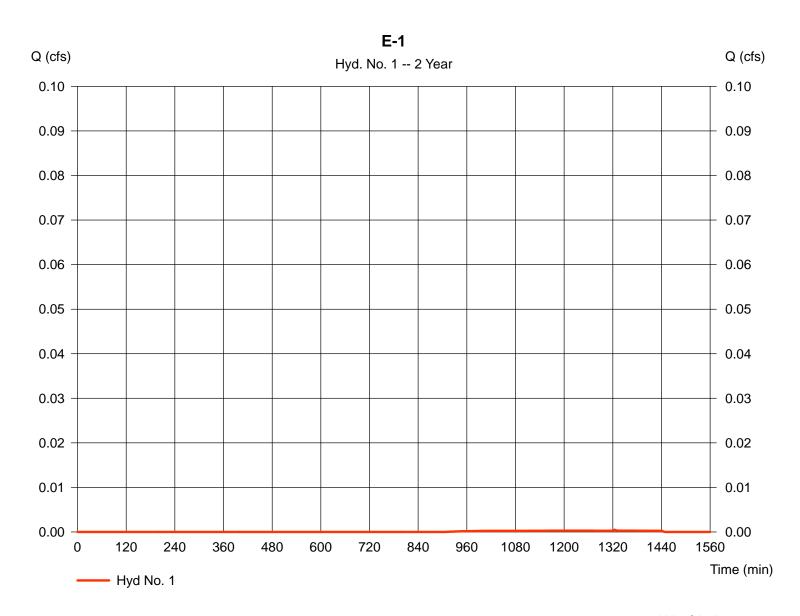
Hydraflow Hydrographs by Intelisolve v9.2

Monday, Feb 1, 2021

### Hyd. No. 1

E-1

Hydrograph type Storm frequency Time interval Drainage area Basin Slope Tc method Total precip.	= SCS Runoff = 2 yrs = 1 min = 0.150 ac = 0.0 % = USER = 3.10 in = 24 brs	Peak discharge Time to peak Hyd. volume Curve number Hydraulic length Time of conc. (Tc) Distribution Shape factor	= 0.001 cfs = 1324 min = 8 cuft = 43 = 0 ft = 6.00 min = Type III = 484
Storm duration	= 24 hrs	Shape factor	= 484



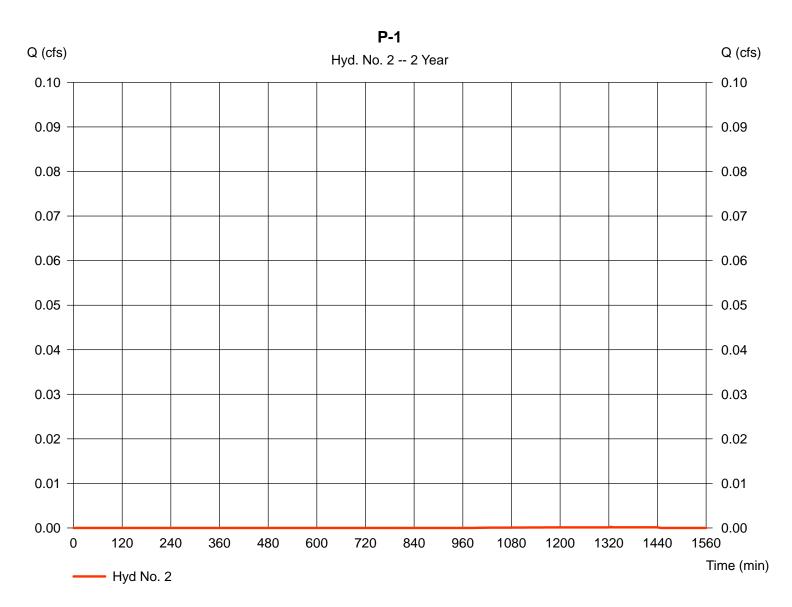
Hydraflow Hydrographs by Intelisolve v9.2

Monday, Feb 1, 2021

#### Hyd. No. 2

P-1

Hydrograph type = SCS Runoff Peak discharge = 0.000 cfsStorm frequency Time to peak = 2 yrs $= 1324 \, \text{min}$ Time interval = 1 minHyd. volume = 3 cuft Drainage area = 0.105 acCurve number = 42 Basin Slope = 0.0 %Hydraulic length = 0 ftTc method = USER Time of conc. (Tc)  $= 6.00 \, \text{min}$ Distribution Total precip. = 3.10 in= Type III Storm duration = 24 hrs Shape factor = 484



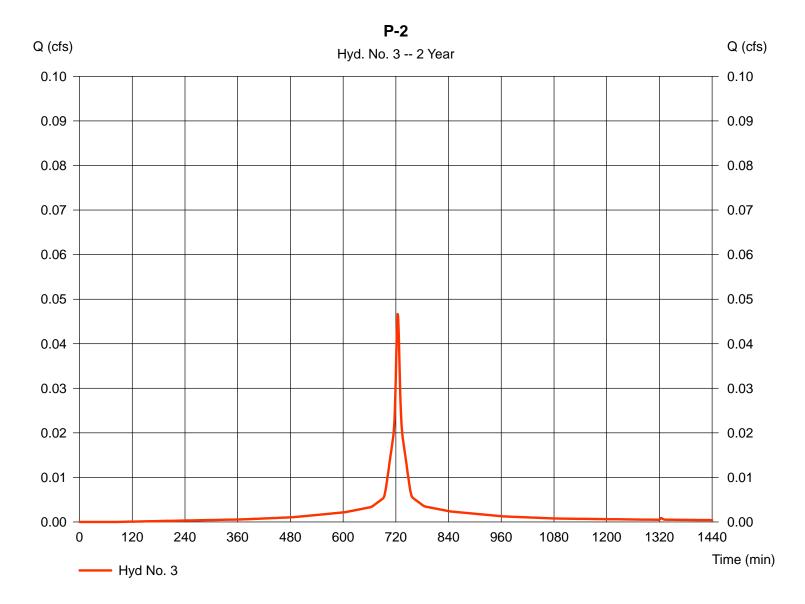
Hydraflow Hydrographs by Intelisolve v9.2

Monday, Feb 1, 2021

### Hyd. No. 3

P-2

= SCS Runoff Hydrograph type Peak discharge = 0.047 cfsStorm frequency Time to peak = 724 min = 2 yrsTime interval = 1 minHyd. volume = 161 cuft Drainage area = 0.015 acCurve number = 98 Basin Slope = 0.0 %Hydraulic length = 0 ftTc method = USER Time of conc. (Tc)  $= 6.00 \, \text{min}$ Distribution Total precip. = 3.10 in= Type III Storm duration = 24 hrs Shape factor = 484



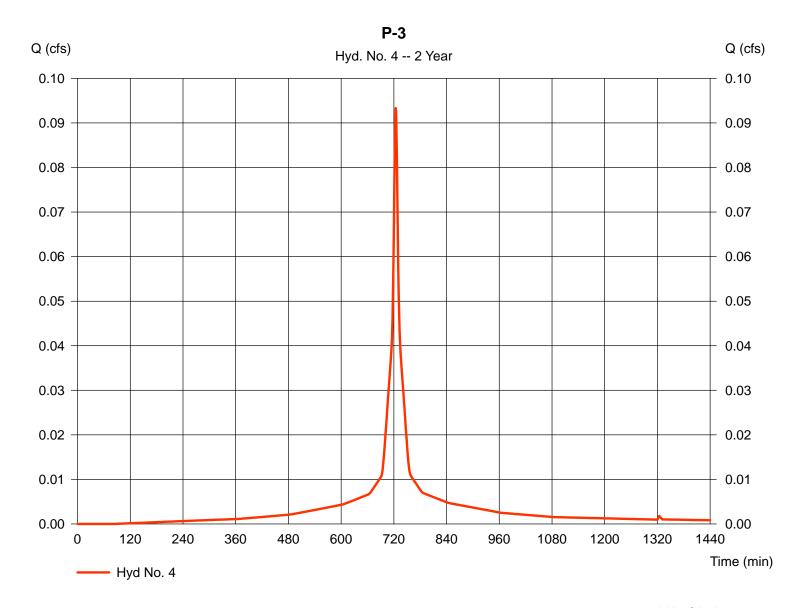
Hydraflow Hydrographs by Intelisolve v9.2

Monday, Feb 1, 2021

#### Hyd. No. 4

P-3

= SCS Runoff Hydrograph type Peak discharge = 0.093 cfsStorm frequency Time to peak = 724 min = 2 yrsTime interval = 1 min Hyd. volume = 322 cuft Drainage area = 0.030 acCurve number = 98 Basin Slope = 0.0 %Hydraulic length = 0 ftTc method = USER Time of conc. (Tc)  $= 6.00 \, \text{min}$ Distribution Total precip. = 3.10 in= Type III Storm duration = 24 hrs Shape factor = 484



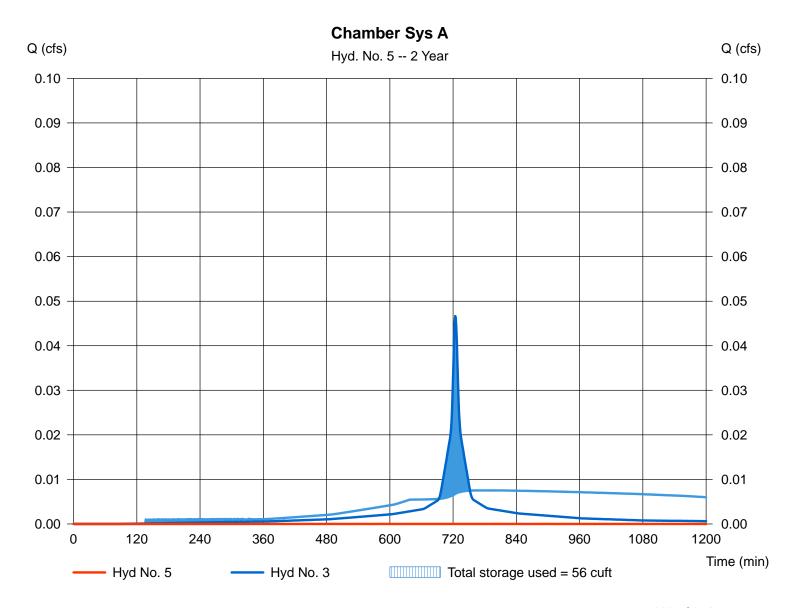
Hydraflow Hydrographs by Intelisolve v9.2

Monday, Feb 1, 2021

### Hyd. No. 5

Chamber Sys A

Hydrograph type = Reservoir Peak discharge = 0.000 cfsStorm frequency Time to peak = 2 yrs= 655 min Time interval = 1 min Hyd. volume = 0 cuft Max. Elevation Inflow hyd. No. = 3 - P-2= 209.20 ftReservoir name = RA-BMax. Storage = 56 cuft



Hydraflow Hydrographs by Intelisolve v9.2

#### Pond No. 1 - RA-B

#### **Pond Data**

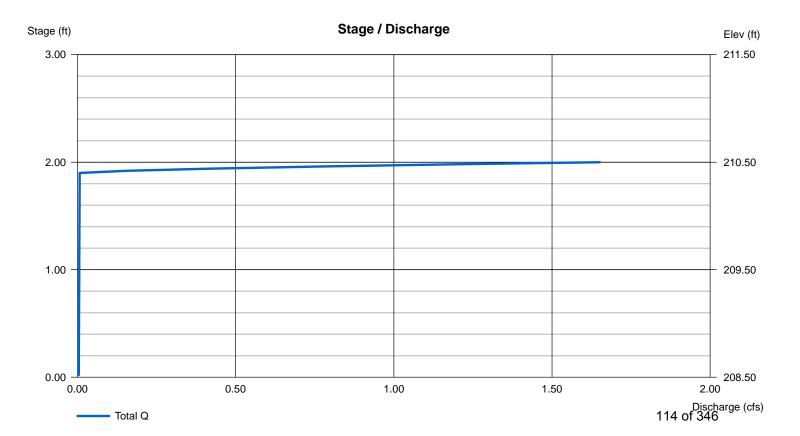
**UG Chambers -** Invert elev. = 209.00 ft, Rise x Span =  $1.00 \times 3.00 \text{ ft}$ , Barrel Len = 32.00 ft, No. Barrels = 1, Slope = 0.00%, Headers = No **Encasement -** Invert elev. = 208.50 ft, Width = 5.00 ft, Height = 2.00 ft, Voids = 40.00%

#### Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	208.50	n/a	0	0
0.20	208.70	n/a	13	13
0.40	208.90	n/a	13	26
0.60	209.10	n/a	19	44
0.80	209.30	n/a	24	68
1.00	209.50	n/a	23	92
1.20	209.70	n/a	22	114
1.40	209.90	n/a	20	133
1.60	210.10	n/a	14	148
1.80	210.30	n/a	13	160
2.00	210.50	n/a	13	173

#### **Culvert / Orifice Structures Weir Structures** [A] [B] [C] [PrfRsr] [A] [B] [C] [D] 0.00 0.00 = 0.000.00 = 20.000.00 0.00 0.00 Rise (in) Crest Len (ft) Span (in) = 0.000.00 0.00 0.00 Crest El. (ft) = 210.400.00 0.00 0.00 Weir Coeff. = 2.603.33 3.33 3.33 No. Barrels = 00 0.00 0.00 0.00 Invert El. (ft) = 0.00Weir Type = Broad = 0.00Length (ft) 0.00 0.00 0.00 Multi-Stage = No No No No Slope (%) = 0.000.00 0.00 n/a = .013 N-Value .013 .013 n/a = 0.60 Orifice Coeff. 0.60 0.60 0.60 Exfil.(in/hr) = 1.020 (by Wet area) TW Elev. (ft) = 0.00Multi-Stage = n/aNo No No

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



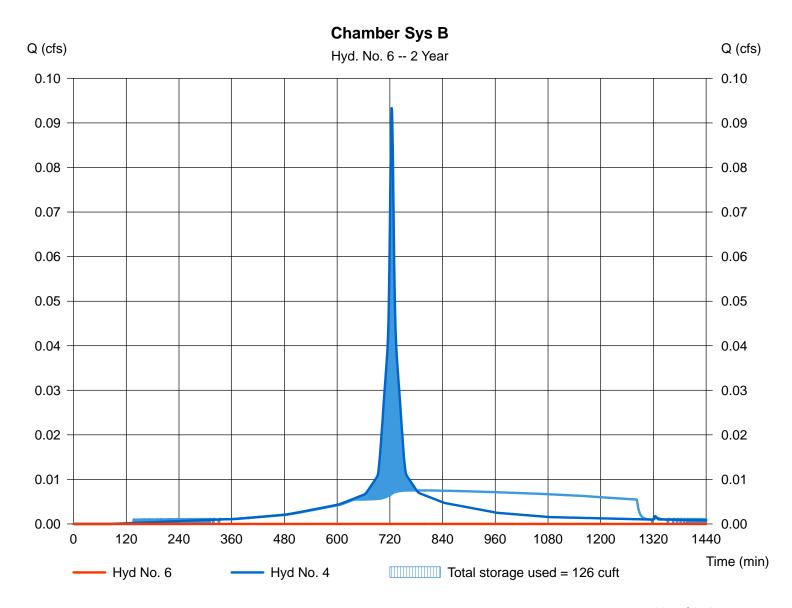
Hydraflow Hydrographs by Intelisolve v9.2

Monday, Feb 1, 2021

#### Hyd. No. 6

Chamber Sys B

Hydrograph type = Reservoir Peak discharge = 0.000 cfsStorm frequency Time to peak = 2 yrs $= 605 \, \text{min}$ Time interval = 1 min Hyd. volume = 0 cuftInflow hyd. No. = 4 - P - 3Max. Elevation = 229.47 ftReservoir name = RA-BMax. Storage = 126 cuft



#### Hydraflow Hydrographs by Intelisolve v9.2

#### Pond No. 2 - RA-B

#### **Pond Data**

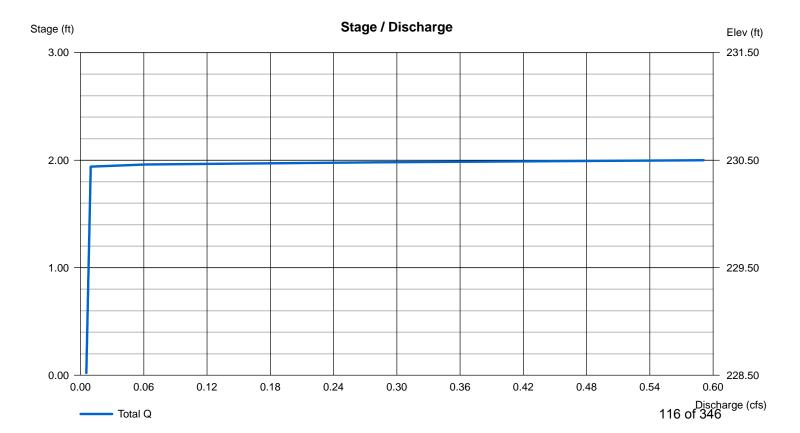
**UG Chambers -** Invert elev. = 229.00 ft, Rise x Span =  $1.00 \times 3.00 \text{ ft}$ , Barrel Len = 23.00 ft, No. Barrels = 2, Slope = 0.00%, Headers = No **Encasement -** Invert elev. = 228.50 ft, Width = 5.00 ft, Height = 2.00 ft, Voids = 40.00%

#### Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	228.50	n/a	0	0
0.20	228.70	n/a	18	18
0.40	228.90	n/a	18	37
0.60	229.10	n/a	27	63
0.80	229.30	n/a	35	98
1.00	229.50	n/a	34	132
1.20	229.70	n/a	32	163
1.40	229.90	n/a	28	191
1.60	230.10	n/a	21	212
1.80	230.30	n/a	18	231
2.00	230.50	n/a	18	249

#### **Culvert / Orifice Structures Weir Structures** [A] [B] [C] [PrfRsr] [A] [B] [C] [D] 0.00 0.00 0.00 = 0.000.00 = 20.000.00 0.00 Rise (in) Crest Len (ft) Span (in) = 0.000.00 0.00 0.00 Crest El. (ft) = 230.450.00 0.00 0.00 Weir Coeff. = 2.603.33 3.33 3.33 No. Barrels = 00 = 0.000.00 0.00 0.00 Invert El. (ft) Weir Type = Broad = 0.00Length (ft) 0.00 0.00 0.00 Multi-Stage = No No No No Slope (%) = 0.000.00 0.00 n/a N-Value = .013.013 .013 n/a = 0.60 Orifice Coeff. 0.60 0.60 0.60 Exfil.(in/hr) = 1.020 (by Wet area) TW Elev. (ft) = 0.00Multi-Stage = n/aNo No No

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



Hydraflow Hydrographs by Intelisolve v9.2

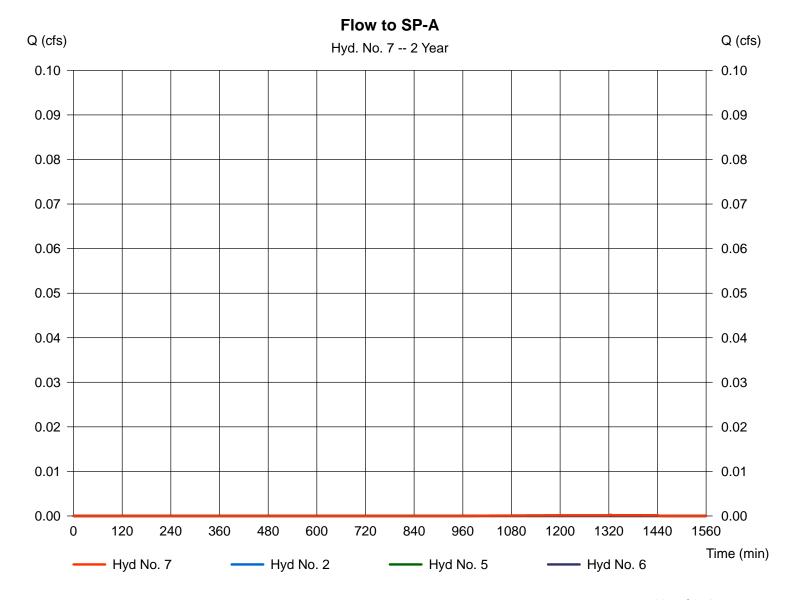
Monday, Feb 1, 2021

### Hyd. No. 7

Flow to SP-A

Hydrograph type = Combine Storm frequency = 2 yrs Time interval = 1 min Inflow hyds. = 2, 5, 6

Peak discharge = 0.000 cfs Time to peak = 1324 min Hyd. volume = 3 cuft Contrib. drain. area = 0.105 ac



# **Hydrograph Summary Report**

Hydraflow Hydrographs by Intelisolve v9.2

	Hydranow Hydrographs by Intelisoive ve								
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	0.010	1	744	127				E-1
2	SCS Runoff	0.005	1	746	76				P-1
3	SCS Runoff	0.068	1	724	239				P-2
4	SCS Runoff	0.136	1	724	479				P-3
5	Reservoir	0.000	1	599	0	3	209.53	94.4	Chamber Sys A
6	Reservoir	0.000	1	424	0	4	230.09	211	Chamber Sys B
7	Combine	0.005	1	746	76	2, 5, 6			Flow to SP-A
hvd	ro Henry St.g	DW			Return D	eriod: 10 Y	ear	Monday, Fe	118 of 346

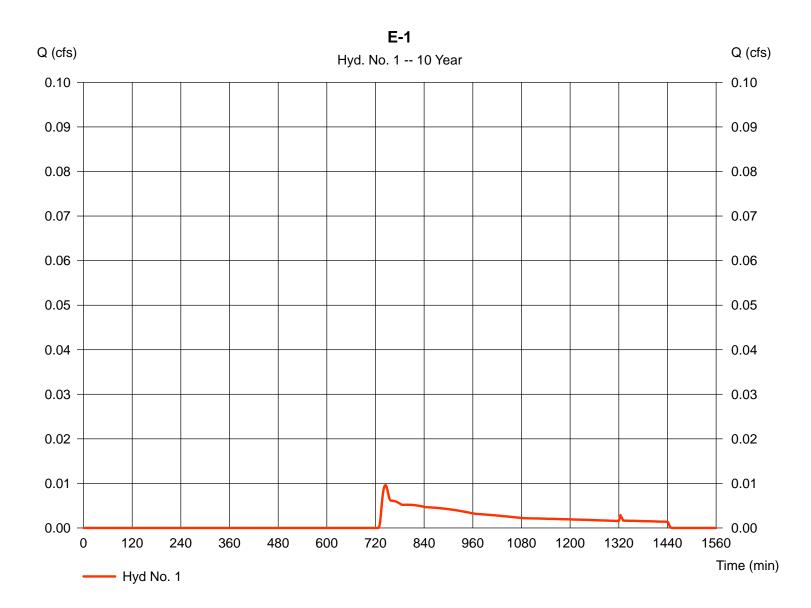
Hydraflow Hydrographs by Intelisolve v9.2

Monday, Feb 1, 2021

### Hyd. No. 1

E-1

Hydrograph type	= SCS Runoff	Peak discharge	= 0.010 cfs
Storm frequency	= 10 yrs	Time to peak	= 744 min
Time interval	= 1 min	Hyd. volume	= 127 cuft
Drainage area	= 0.150 ac	Curve number	= 43
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 6.00  min
Total precip.	= 4.50 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



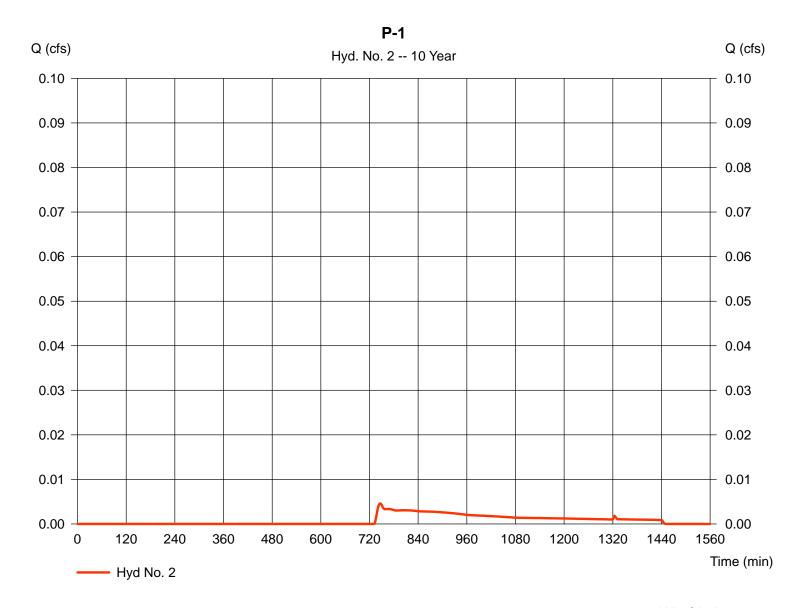
Hydraflow Hydrographs by Intelisolve v9.2

Monday, Feb 1, 2021

### Hyd. No. 2

P-1

Hydrograph type	= SCS Runoff	Peak discharge	= 0.005 cfs
Storm frequency	= 10 yrs	Time to peak	= 746 min
Time interval	= 1 min	Hyd. volume	= 76 cuft
Drainage area	= 0.105 ac	Curve number	= 42
Basin Slope Tc method Total precip. Storm duration	= 0.0 % = USER = 4.50 in = 24 hrs	Hydraulic length Time of conc. (Tc) Distribution Shape factor	= 0 ft = 6.00 min = Type III = 484



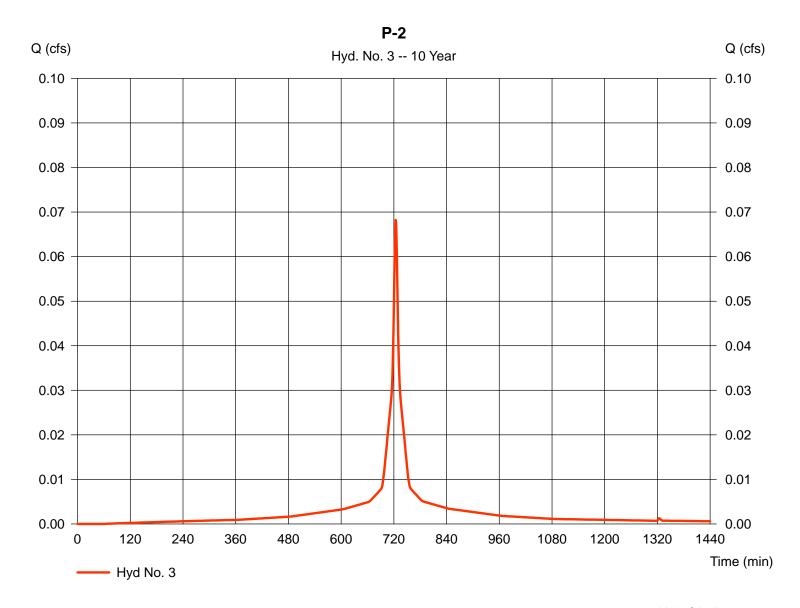
Hydraflow Hydrographs by Intelisolve v9.2

Monday, Feb 1, 2021

### Hyd. No. 3

P-2

= SCS Runoff Hydrograph type Peak discharge = 0.068 cfsStorm frequency Time to peak = 724 min = 10 yrsTime interval = 1 minHyd. volume = 239 cuft Drainage area = 0.015 acCurve number = 98 Basin Slope = 0.0 %Hydraulic length = 0 ftTc method = USER Time of conc. (Tc)  $= 6.00 \, \text{min}$ Distribution Total precip. = 4.50 in= Type III Storm duration = 24 hrs Shape factor = 484



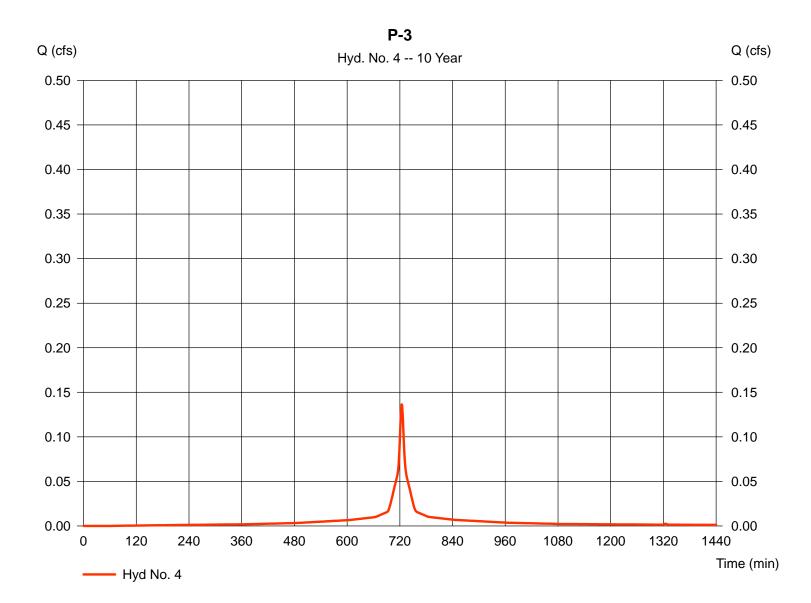
Hydraflow Hydrographs by Intelisolve v9.2

Monday, Feb 1, 2021

### Hyd. No. 4

P-3

= SCS Runoff Hydrograph type Peak discharge = 0.136 cfsStorm frequency Time to peak = 724 min = 10 yrsTime interval = 1 minHyd. volume = 479 cuft Drainage area = 0.030 acCurve number = 98 Basin Slope = 0.0 %Hydraulic length = 0 ftTc method = USER Time of conc. (Tc)  $= 6.00 \, \text{min}$ Distribution Total precip. = 4.50 in= Type III Storm duration = 24 hrs Shape factor = 484



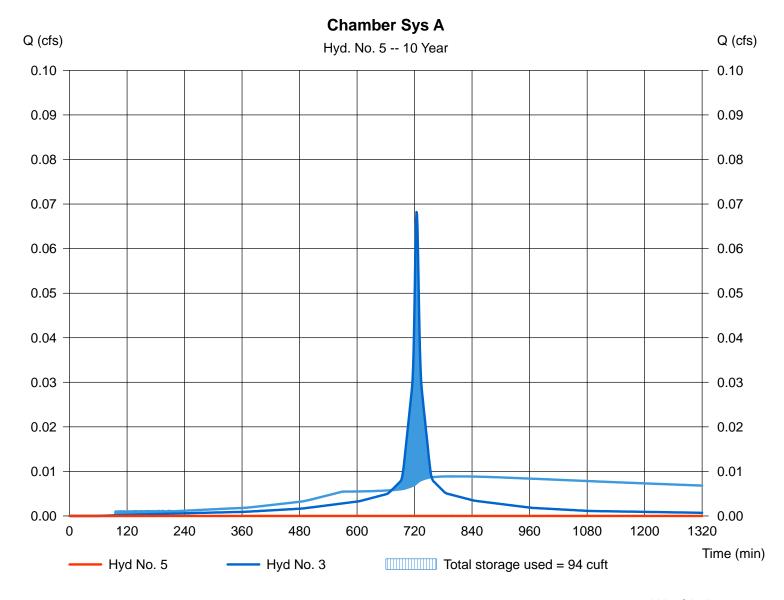
Hydraflow Hydrographs by Intelisolve v9.2

Monday, Feb 1, 2021

### Hyd. No. 5

Chamber Sys A

Hydrograph type = Reservoir Peak discharge = 0.000 cfsStorm frequency Time to peak = 10 yrs $= 599 \, \text{min}$ Time interval = 1 min Hyd. volume = 0 cuftInflow hyd. No. = 3 - P-2Max. Elevation = 209.53 ftReservoir name = RA-BMax. Storage = 94 cuft



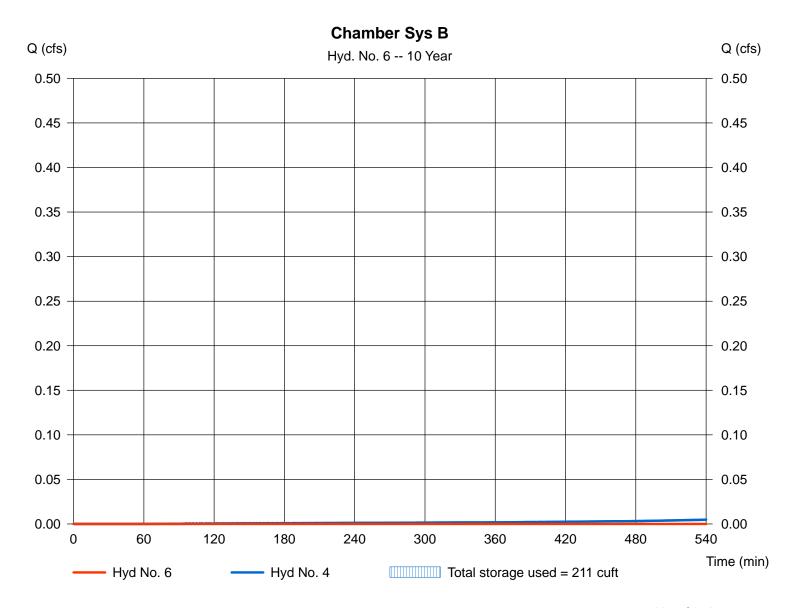
Hydraflow Hydrographs by Intelisolve v9.2

Monday, Feb 1, 2021

#### Hyd. No. 6

Chamber Sys B

Hydrograph type = Reservoir Peak discharge = 0.000 cfsStorm frequency Time to peak = 10 yrs $= 424 \min$ Time interval = 1 min Hyd. volume = 0 cuftInflow hyd. No. = 4 - P - 3Max. Elevation = 230.09 ftReservoir name = RA-BMax. Storage = 211 cuft



Hydraflow Hydrographs by Intelisolve v9.2

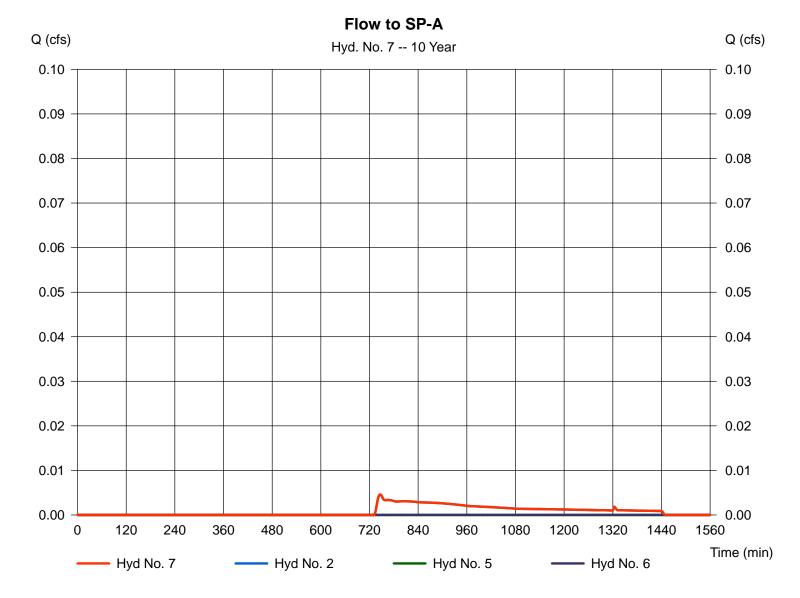
Monday, Feb 1, 2021

### Hyd. No. 7

Flow to SP-A

Hydrograph type = Combine Storm frequency = 10 yrs Time interval = 1 min Inflow hyds. = 2, 5, 6

Peak discharge = 0.005 cfs
Time to peak = 746 min
Hyd. volume = 76 cuft
Contrib. drain. area = 0.105 ac



# **Hydrograph Summary Report**

Hydraflow Hydrographs by Intelisolve v9.2

1         SCS Runoff         0.030         1         738         248            P-1           2         SCS Runoff         0.081         1         740         155           P-1           3         SCS Runoff         0.081         1         724         284           P-2           4         SCS Runoff         0.161         1         724         569           P-3           5         Reservoir         0.000         1         554         0         3         209.75         118         Chamber Sys A           6         Reservoir         0.019         1         751         19         4         230.45         244         Chamber Sys B           7         Combine         0.031         1         751         174         2, 5, 6           Flow to SP-A
3 SCS Runoff 0.081 1 724 284 P-2 4 SCS Runoff 0.161 1 724 569 P-3 5 Reservoir 0.000 1 554 0 3 209.75 118 Chamber Sys A 6 Reservoir 0.019 1 751 19 4 230.45 244 Chamber Sys B
4 SCS Runoff 0.161 1 724 569 P-3  5 Reservoir 0.000 1 554 0 3 209.75 118 Chamber Sys A  6 Reservoir 0.019 1 751 19 4 230.45 244 Chamber Sys B
5       Reservoir       0.000       1       554       0       3       209.75       118       Chamber Sys A         6       Reservoir       0.019       1       751       19       4       230.45       244       Chamber Sys B
6 Reservoir 0.019 1 751 19 4 230.45 244 Chamber Sys B
7 Combine 0.031 1 751 174 2,5,6 Flow to SP-A

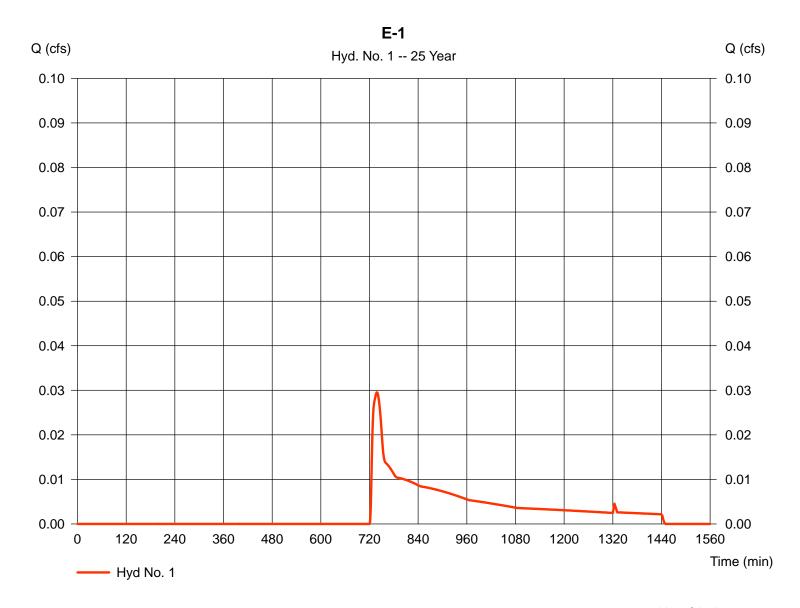
Hydraflow Hydrographs by Intelisolve v9.2

Monday, Feb 1, 2021

## Hyd. No. 1

E-1

Hydrograph type	= SCS Runoff	Peak discharge	= 0.030 cfs
Storm frequency	= 25 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 248 cuft
Drainage area	= 0.150 ac	Curve number	= 43
Basin Slope Tc method Total precip. Storm duration	= 0.0 % = USER = 5.30 in = 24 hrs	Hydraulic length Time of conc. (Tc) Distribution Shape factor	= 0 ft = 6.00 min = Type III = 484



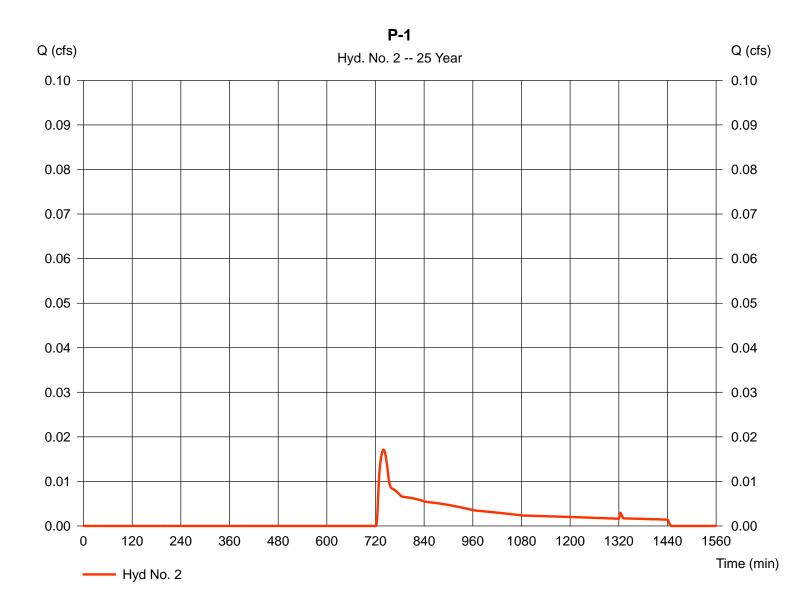
Hydraflow Hydrographs by Intelisolve v9.2

Monday, Feb 1, 2021

#### Hyd. No. 2

P-1

= SCS Runoff Hydrograph type Peak discharge = 0.017 cfsStorm frequency Time to peak = 25 yrs $= 740 \, \text{min}$ Time interval = 1 minHyd. volume = 155 cuft Drainage area = 0.105 acCurve number = 42 Basin Slope = 0.0 %Hydraulic length = 0 ftTc method = USER Time of conc. (Tc)  $= 6.00 \, \text{min}$ Distribution Total precip. = 5.30 in= Type III Storm duration = 24 hrs Shape factor = 484



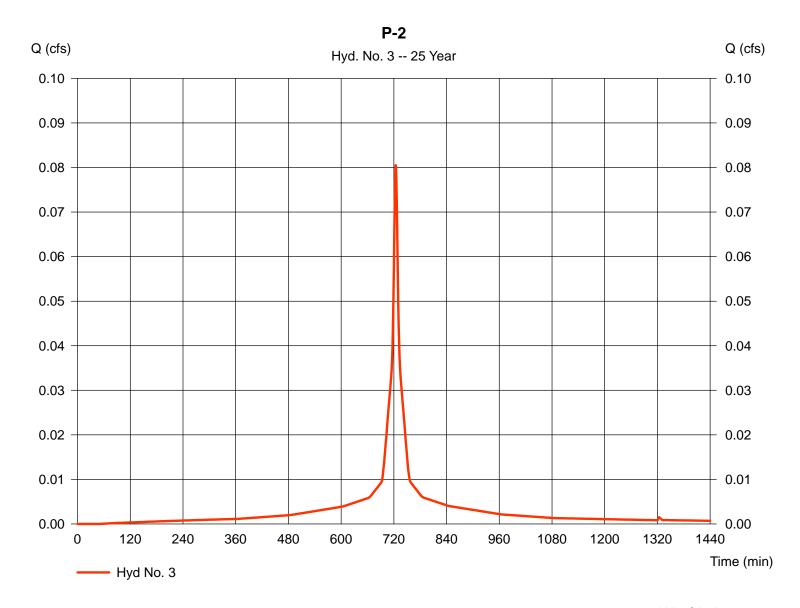
Hydraflow Hydrographs by Intelisolve v9.2

Monday, Feb 1, 2021

### Hyd. No. 3

P-2

= SCS Runoff Hydrograph type Peak discharge = 0.081 cfsStorm frequency Time to peak = 25 yrs $= 724 \, \text{min}$ Time interval = 1 minHyd. volume = 284 cuft Drainage area = 0.015 acCurve number = 98 Basin Slope = 0.0 %Hydraulic length = 0 ftTc method = USER Time of conc. (Tc)  $= 6.00 \, \text{min}$ Distribution Total precip. = 5.30 in= Type III Storm duration = 24 hrs Shape factor = 484



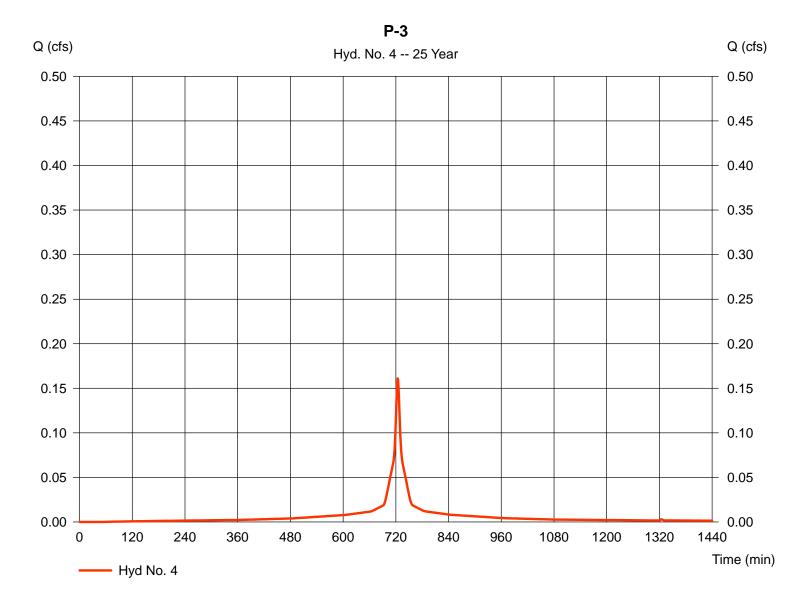
Hydraflow Hydrographs by Intelisolve v9.2

Monday, Feb 1, 2021

#### Hyd. No. 4

P-3

= SCS Runoff Hydrograph type Peak discharge = 0.161 cfsStorm frequency Time to peak = 724 min = 25 yrsTime interval = 1 minHyd. volume = 569 cuft Drainage area = 0.030 acCurve number = 98 Basin Slope = 0.0 %Hydraulic length = 0 ftTc method = USER Time of conc. (Tc)  $= 6.00 \, \text{min}$ Distribution Total precip. = 5.30 in= Type III Storm duration = 24 hrs Shape factor = 484



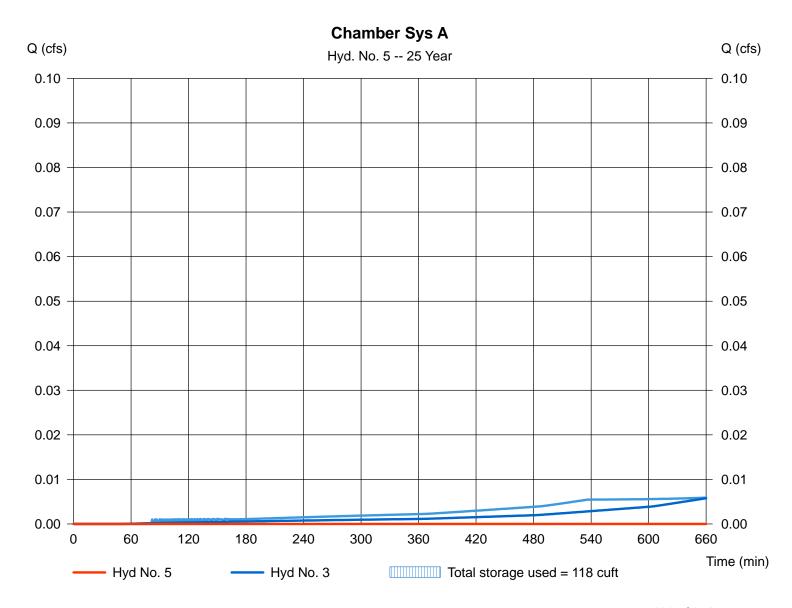
Hydraflow Hydrographs by Intelisolve v9.2

Monday, Feb 1, 2021

### Hyd. No. 5

Chamber Sys A

Hydrograph type = Reservoir Peak discharge = 0.000 cfsStorm frequency Time to peak = 25 yrs= 554 min Time interval = 1 minHyd. volume = 0 cuft Inflow hyd. No. = 3 - P-2Max. Elevation = 209.75 ftReservoir name = RA-BMax. Storage = 118 cuft



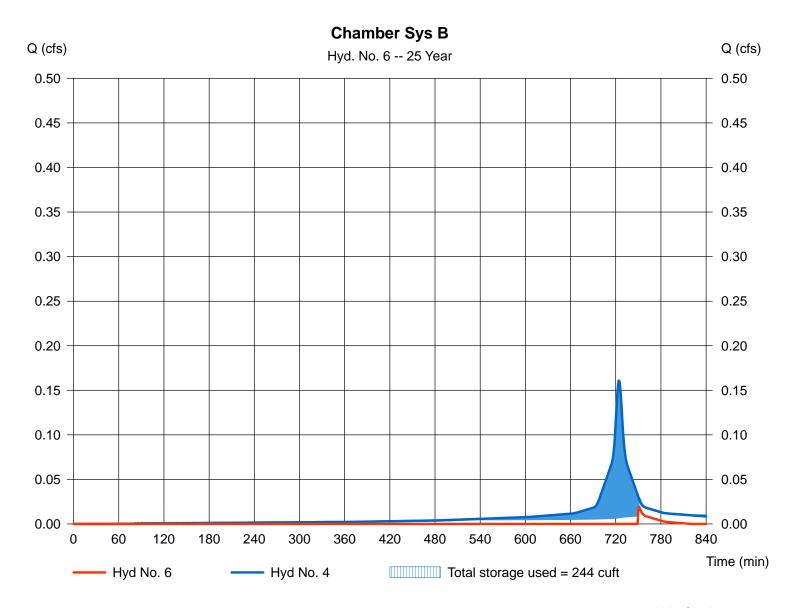
Hydraflow Hydrographs by Intelisolve v9.2

Monday, Feb 1, 2021

#### Hyd. No. 6

Chamber Sys B

Hydrograph type = Reservoir Peak discharge = 0.019 cfsStorm frequency Time to peak = 25 yrs= 751 min Time interval = 1 minHyd. volume = 19 cuft Inflow hyd. No. = 4 - P - 3Max. Elevation = 230.45 ftReservoir name = RA-BMax. Storage = 244 cuft



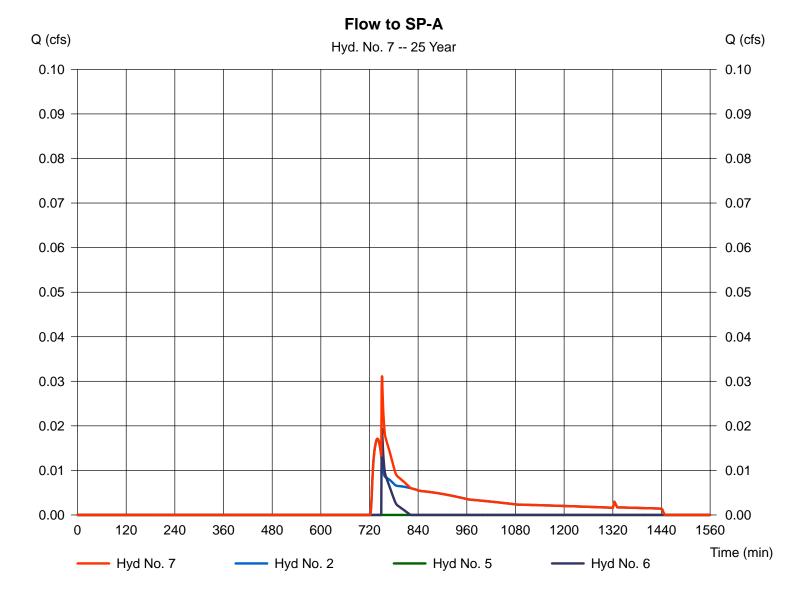
Hydraflow Hydrographs by Intelisolve v9.2

Monday, Feb 1, 2021

### Hyd. No. 7

Flow to SP-A

Hydrograph type = Combine Storm frequency = 25 yrs Time interval = 1 min Inflow hyds. = 2, 5, 6 Peak discharge = 0.031 cfs
Time to peak = 751 min
Hyd. volume = 174 cuft
Contrib. drain. area = 0.105 ac



# **Hydrograph Summary Report**

Hydraflow Hydrographs by Intelisolve v9.2

	Hydranow Hydrographs by Intelisoive v9								
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	0.135	1	726	603				E-1
2	SCS Runoff	0.082	1	727	391				P-1
3	SCS Runoff	0.107	1	724	380				P-2
4	SCS Runoff	0.213	1	724	759				P-3
5	Reservoir	0.005	1	767	5	3	210.40	167	Chamber Sys A
6	Reservoir	0.221	1	728	146	4	230.50	247	Chamber Sys B
7	Combine	0.301	1	728	541	2, 5, 6			Flow to SP-A
hyd	ro Henry St.g	pw			Return P	eriod: 100	Year	Monday, Fe	134 of 346 eb 1, 2021

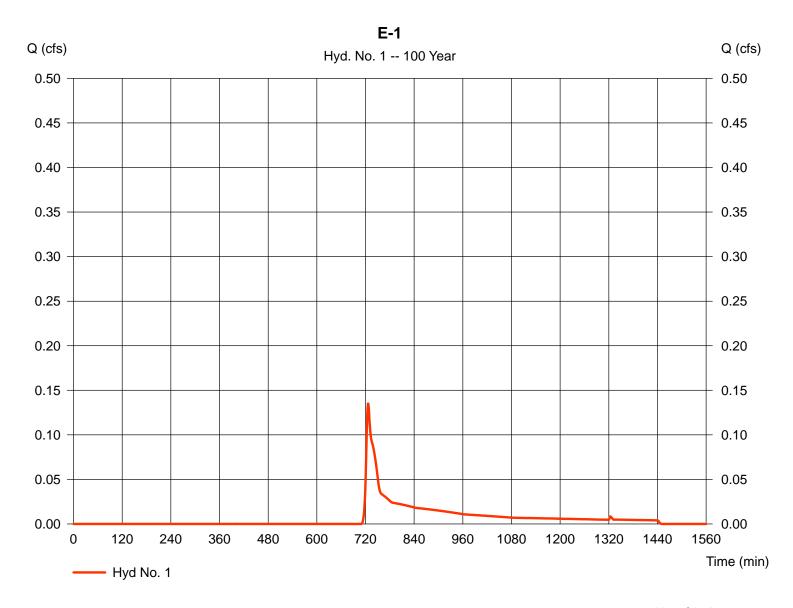
Hydraflow Hydrographs by Intelisolve v9.2

Monday, Feb 1, 2021

### Hyd. No. 1

E-1

= SCS Runoff Hydrograph type Peak discharge = 0.135 cfsStorm frequency Time to peak = 100 yrs $= 726 \, \text{min}$ Time interval = 1 minHyd. volume = 603 cuft Drainage area = 0.150 acCurve number = 43 Basin Slope = 0.0 %Hydraulic length = 0 ftTc method = USER Time of conc. (Tc)  $= 6.00 \, \text{min}$ Distribution Total precip. = 7.00 in= Type III Storm duration = 24 hrs Shape factor = 484



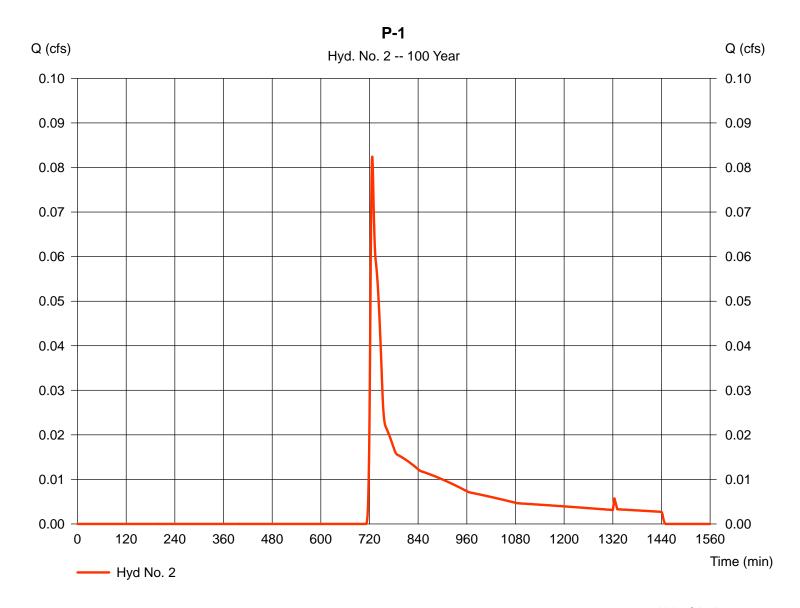
Hydraflow Hydrographs by Intelisolve v9.2

Monday, Feb 1, 2021

#### Hyd. No. 2

P-1

= SCS Runoff Hydrograph type Peak discharge = 0.082 cfsStorm frequency Time to peak = 100 yrs $= 727 \, \text{min}$ Time interval = 1 minHyd. volume = 391 cuft Drainage area = 0.105 acCurve number = 42 Basin Slope = 0.0 %Hydraulic length = 0 ftTc method = USER Time of conc. (Tc)  $= 6.00 \, \text{min}$ Distribution Total precip. = 7.00 in= Type III Storm duration = 24 hrs Shape factor = 484



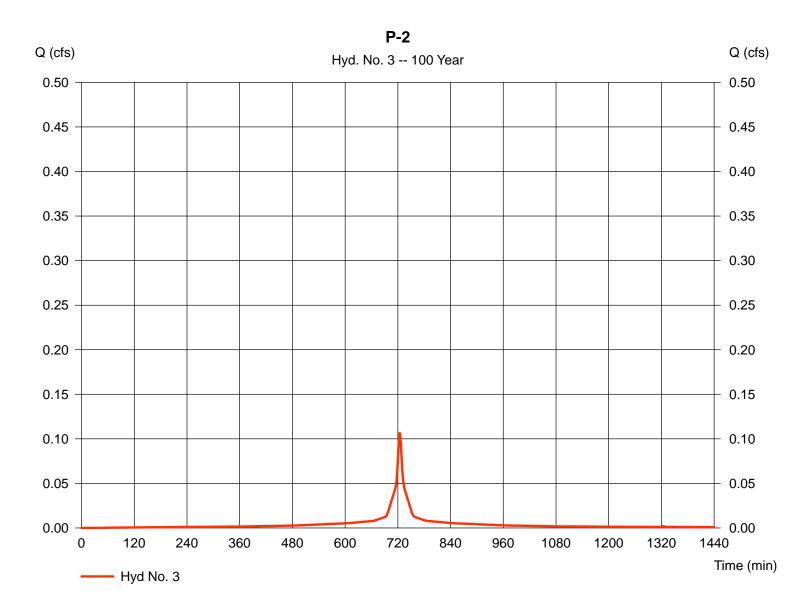
Hydraflow Hydrographs by Intelisolve v9.2

Monday, Feb 1, 2021

### Hyd. No. 3

P-2

Hydrograph type = SCS Runoff Peak discharge = 0.107 cfsStorm frequency Time to peak = 724 min = 100 yrsTime interval = 1 minHyd. volume = 380 cuft Drainage area = 0.015 acCurve number = 98 Basin Slope = 0.0 %Hydraulic length = 0 ftTc method = USER Time of conc. (Tc)  $= 6.00 \, \text{min}$ Distribution Total precip. = 7.00 in= Type III Storm duration = 24 hrs Shape factor = 484



Hydraflow Hydrographs by Intelisolve v9.2

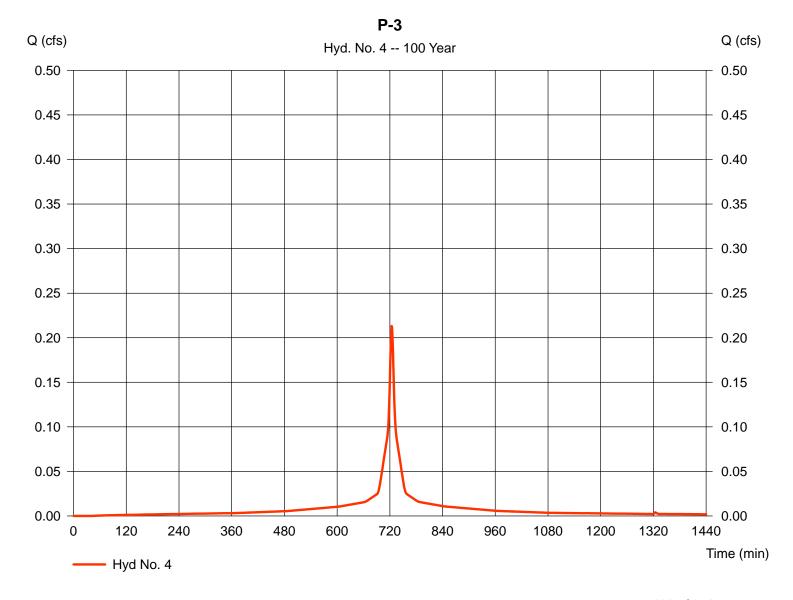
Monday, Feb 1, 2021

### Hyd. No. 4

P-3

= SCS Runoff Hydrograph type Storm frequency = 100 yrsTime interval = 1 minDrainage area = 0.030 acBasin Slope = 0.0 %Tc method = USER Total precip. = 7.00 inStorm duration = 24 hrs

Peak discharge = 0.213 cfsTime to peak = 724 min Hyd. volume = 759 cuft Curve number = 98 Hydraulic length = 0 ftTime of conc. (Tc)  $= 6.00 \, \text{min}$ Distribution = Type III Shape factor = 484



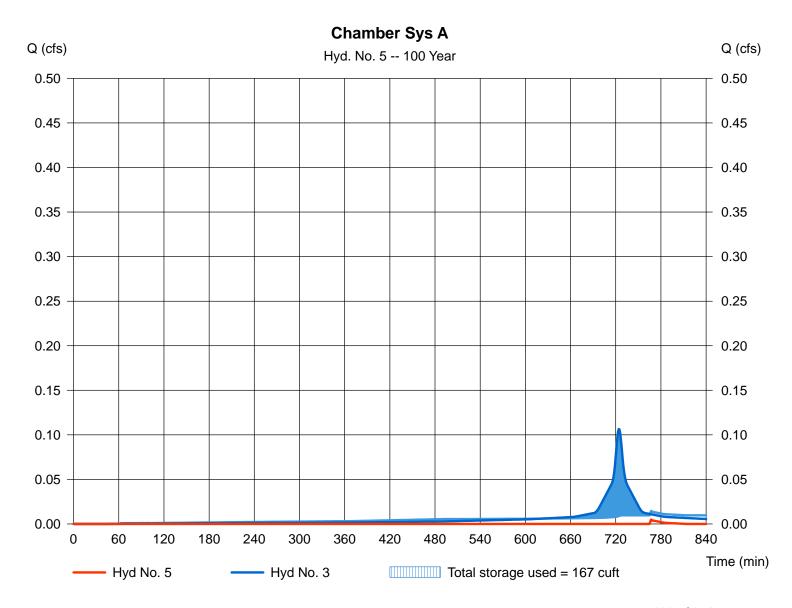
Hydraflow Hydrographs by Intelisolve v9.2

Monday, Feb 1, 2021

### Hyd. No. 5

Chamber Sys A

Hydrograph type = Reservoir Peak discharge = 0.005 cfsStorm frequency Time to peak = 100 yrs= 767 min Time interval = 1 minHyd. volume = 5 cuft Inflow hyd. No. = 3 - P-2Max. Elevation = 210.40 ftReservoir name = RA-BMax. Storage = 167 cuft



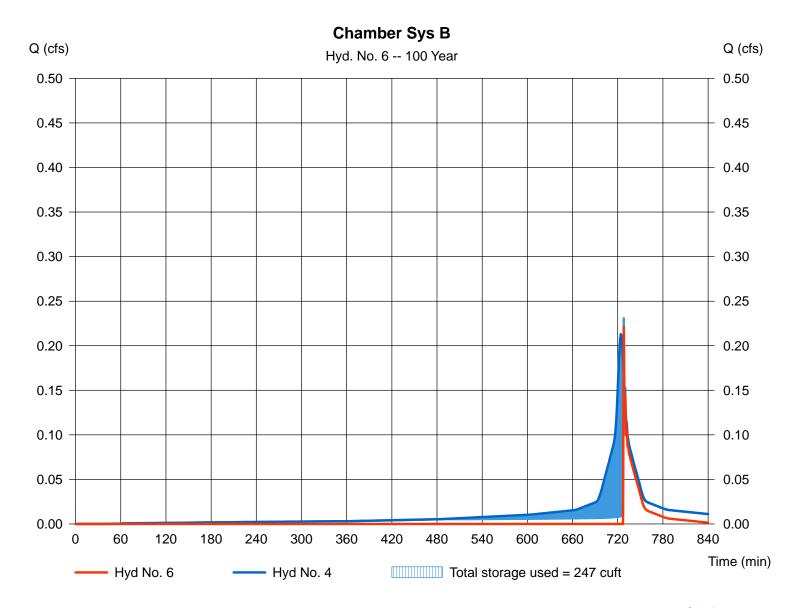
Hydraflow Hydrographs by Intelisolve v9.2

Monday, Feb 1, 2021

#### Hyd. No. 6

Chamber Sys B

Hydrograph type = Reservoir Peak discharge = 0.221 cfsStorm frequency Time to peak = 100 yrs= 728 min Time interval = 1 minHyd. volume = 146 cuft Inflow hyd. No. = 4 - P - 3Max. Elevation = 230.50 ftReservoir name = RA-BMax. Storage = 247 cuft



Hydraflow Hydrographs by Intelisolve v9.2

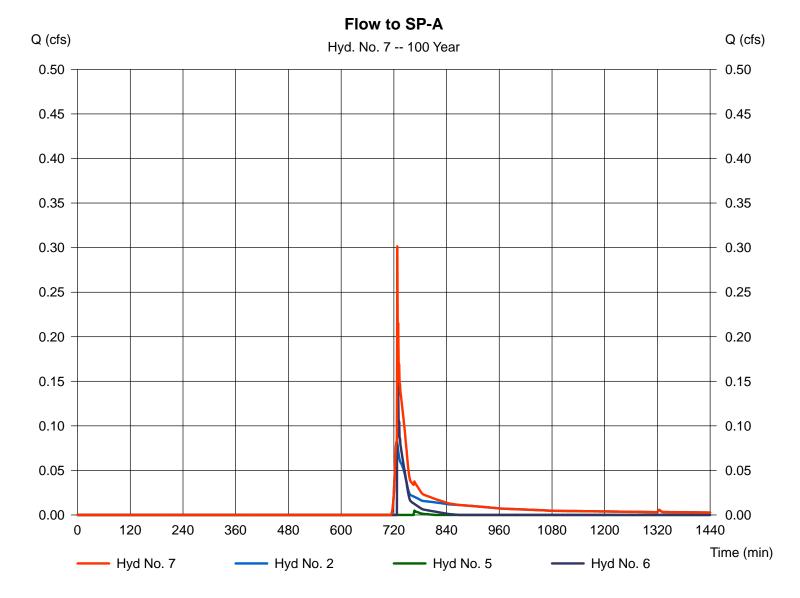
Monday, Feb 1, 2021

### Hyd. No. 7

Flow to SP-A

Hydrograph type = Combine Storm frequency = 100 yrs Time interval = 1 min Inflow hyds. = 2, 5, 6

Peak discharge = 0.301 cfs
Time to peak = 728 min
Hyd. volume = 541 cuft
Contrib. drain. area = 0.105 ac



## RECHARGE AREA CHARACTERISTICS

#### Pond No. 1 - RA-B

#### **Pond Data**

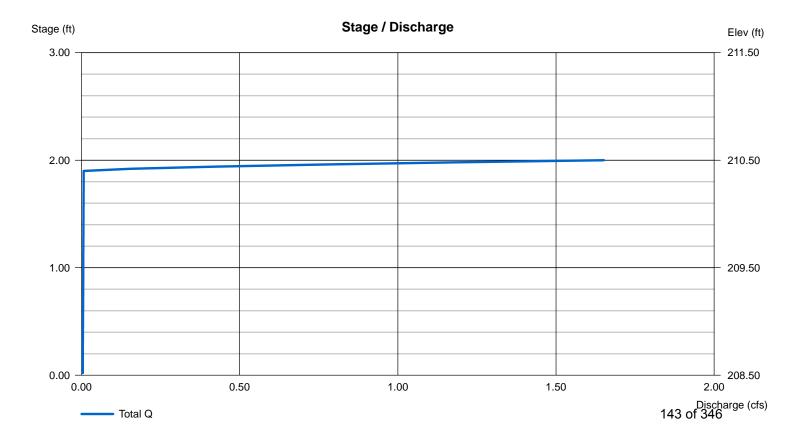
 $\begin{tabular}{ll} \textbf{UG Chambers -} Invert elev. = 209.00 ft, Rise x Span = 1.00 x 3.00 ft, Barrel Len = 32.00 ft, No. Barrels = 1, Slope = 0.00\%, Headers = No \\ \textbf{Encasement -} Invert elev. = 208.50 ft, Width = 5.00 ft, Height = 2.00 ft, Voids = 40.00\% \\ \end{tabular}$ 

#### Stage / Storage Table

Stage (ft) Elevation (ft)		Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	208.50	n/a	0	0
0.20	208.70	n/a	13	13
0.40	208.90	n/a	13	26
0.60	209.10	n/a	19	44
0.80	209.30	n/a	24	68
1.00	209.50	n/a	23	92
1.20	209.70	n/a	22	114
1.40	209.90	n/a	20	133
1.60	210.10	n/a	14	148
1.80	210.30	n/a	13	160
2.00	210.50	n/a	13	173

Culvert / Orifice Structures					Weir Structures				
	[A]	[B]	[C]	[PrfRsr]		[A]	[B]	[C]	[D]
Rise (in)	= 0.00	0.00	0.00	0.00	Crest Len (ft)	= 20.00	0.00	0.00	0.00
Span (in)	= 0.00	0.00	0.00	0.00	Crest El. (ft)	= 210.40	0.00	0.00	0.00
No. Barrels	= 0	0	0	0	Weir Coeff.	= 2.60	3.33	3.33	3.33
Invert El. (ft)	= 0.00	0.00	0.00	0.00	Weir Type	= Broad			
Length (ft)	= 0.00	0.00	0.00	0.00	Multi-Stage	= No	No	No	No
Slope (%)	= 0.00	0.00	0.00	n/a	_				
N-Value	= .013	.013	.013	n/a					
Orifice Coeff.	= 0.60	0.60	0.60	0.60	Exfil.(in/hr)	= 1.020 (by	Wet area)		
Multi-Stage	= n/a	No	No	No	TW Elev. (ft)	= 0.00	,		

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



Hydraflow Hydrographs by Intelisolve v9.2

#### Pond No. 2 - RA-B

#### **Pond Data**

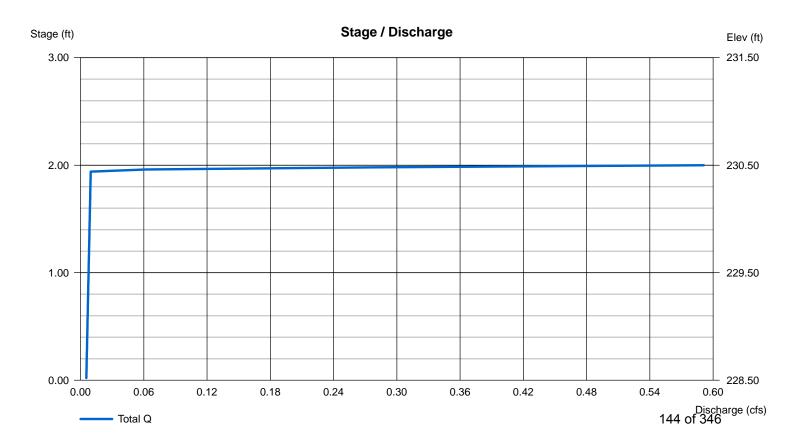
**UG Chambers -** Invert elev. = 229.00 ft, Rise x Span =  $1.00 \times 3.00 \text{ ft}$ , Barrel Len = 23.00 ft, No. Barrels = 2, Slope = 0.00%, Headers = No **Encasement -** Invert elev. = 228.50 ft, Width = 5.00 ft, Height = 2.00 ft, Voids = 40.00%

#### Stage / Storage Table

Stage (ft)	ge (ft) Elevation (ft) Cont		Incr. Storage (cuft)	Total storage (cuft)
0.00	228.50	n/a	0	0
0.20	228.70	n/a	18	18
0.40	228.90	n/a	18	37
0.60	229.10	n/a	27	63
0.80	229.30	n/a	35	98
1.00	229.50	n/a	34	132
1.20	229.70	n/a	32	163
1.40	229.90	n/a	28	191
1.60	230.10	n/a	21	212
1.80	230.30	n/a	18	231
2.00	230.50	n/a	18	249

#### **Culvert / Orifice Structures Weir Structures** [A] [B] [C] [PrfRsr] [A] [B] [C] [D] 0.00 0.00 0.00 = 0.000.00 = 20.000.00 0.00 Rise (in) Crest Len (ft) Span (in) = 0.000.00 0.00 0.00 Crest El. (ft) = 230.450.00 0.00 0.00 Weir Coeff. = 2.603.33 3.33 3.33 No. Barrels = 00 = 0.000.00 0.00 0.00 Invert El. (ft) Weir Type = Broad = 0.00Length (ft) 0.00 0.00 0.00 Multi-Stage = No No No No Slope (%) = 0.000.00 0.00 n/a N-Value = .013.013 .013 n/a = 0.60 Orifice Coeff. 0.60 0.60 0.60 Exfil.(in/hr) = 1.020 (by Wet area) TW Elev. (ft) = 0.00Multi-Stage = n/aNo No No

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



#### Operation and Maintenance Plan

This Stormwater Operation and Maintenance Plan covers the post-construction operation and maintenance of the stormwater management system for 25 Henry St. in Arlington, Massachusetts.

The procedures, practices, and schedule outlined in this plan are intended to be ongoing requirements and are an important factor in ensuring the continued proper functioning of the stormwater management system and integrity of the discharged stormwater.

The following maintenance requirements are the sole responsibility of the property owner(s).

#### Trench Grate

- Remove leaf litter and other debris from grate as needed to ensure adequate capacity for collection of runoff.
- Inspect system at least four times per year and clean sump when debris is accumulated to a depth of six inches.

#### Recharge Systems

- Inspect systems after every major storm in the first three months of construction to ensure proper stabilization and function. Thereafter, inspect quarterly.
- Clean systems at least once per year, or more frequently, as needed to prevent accumulation of sediment and other debris in the system.
- Clean structures when debris is accumulated to a depth of 6 inches.



#### **Town of Arlington, Massachusetts**

#### **Request for Certificate of Compliance**

#### Summary:

Request for Certification of Compliance: Arlington Reservoir Phase 1 MassDEP File #091-0304

8:15pm

The project as completed included the renovation of the bathing beach pump house and filtration system within the 100-ft Wetlands Buffer, Adjacent Upland Resource Area, Bordering Land Subject to Flooding, Land Under Water, and Bank of the Arlington Reservoir..

#### ATTACHMENTS:

	Type	Etta Maria	
	Type	File Name	Description
ם	Request for Certificate of Compliance	RCOC_Arlington_Res_Phase_1_MassDEP#_091-0304.pdf	Reservoir Phase 1 RCOC
ם	Request for Certificate of Compliance	COC_Internal_Checklist_Arlington_Res_Phase_1.pdf	Reservoir Phase 1 RCOC Checklist
ם	Request for Certificate of Compliance	Arlington_Reservoir_Phase_2_NOI_Plans_12032020.pdf	Res Phase 1 As-Builts/Phase 2 Plans
ם	Request for Certificate of Compliance	12052018_NOI_Packet.pdf	Reservoir Phase 1 NOI
ם	Request for Certificate of Compliance	01032019_Revised_Plans.pdf	Reservoir Phase 1 Revised Plans
D	Request for Certificate of Compliance	Arlington_OOC.pdf	Reservoir Phase 1 OOC



15 Research Drive Amherst, Massachusetts 01002 Tel 413.256.0202 Fax 413.256.1092 www.swca.com

February 5, 2021

Arlington Conservation Commission 730 Mass Ave. Annex Arlington, MA 02476

Via email: <a href="mailto:esullivan@town.arlington.ma.us">esullivan@town.arlington.ma.us</a>

Re: Request for a Certificate of Compliance

Arlington Reservoir, Walk Path Improvement Pilot Test

DEP FILE: 091-0304 SWCA File: 64957

#### **Dear Commission Members:**

Attached please find a Request for a Certificate of Compliance for work completed at the Arlington Reservoir under the Phase I Master Plan. This Request is being made for the Orders of Conditions issued by the Commission on January 4, 2019 under the Massachusetts Wetlands Protection Act and the Town of Arlington Bylaw for Wetland Protection (Title V, Art. 8), and Section 18 of the Arlington Regulations for Wetlands Protection.

The Notice of Intent was filed with the Town on December 5, 2018 by Weston & Sampson for a project entitled "Arlington Reservoir Bathing Beach Improvements and Walk Path Improvement Pilot Test". The final plans are dated 01/03/2019.

The project as proposed included the following elements:

- Renovation of the bathing beach pump house
- Temporary alteration of 22 linear feet of Bank, and 2,725 square feet of BLSF
- Work within the 100 foot buffer zone to Wetland Resource Areas.

The Orders of Conditions, General Condition #12 requires "upon completion of the work described herein, the applicant shall submit a Request for Certificate of Compliance (WPA Form 8A) to the Conservation Commission.

In compliance with Special Condition #31, work proposed in the Phase I work has been completed. An existing Conditions Plan, (and site plan for the proposed Phase II work at the Arlington Reservoir) were included as in a full plan set for The Phase II work at Arlington Reservoir (DEP file 091-0327)



The more recently submitted Phase II Master Plan for the Arlington Reservoir (DEP File: 091-0327) supersedes the older project work, therefore we do not recommend any continuing Conditions associated with this Request for a Certificate of Compliance. We will file the Certificate of Compliance at the South Middlesex Registry of Deeds.

If you have any questions or require further information, please contact me at my direct line 413-531-7156 or at <a href="mainto:mmarcus@swca.com">mmarcus@swca.com</a>. I will be available to join the Commission at a scheduled meeting to discuss this Request.

Sincerely,

Mickey Marcus

Professional Wetland Scientist #1635

enc. Request for a Certificate of Compliance

Orders of Conditions (2019)

cc: DEP, Northeast Region

Joseph Connelly, Town of Arlington Director of Recreation

Danielle Desilets, Kyle Zink Landscape Architecture



WPA Form 8A - Request for Certificate of Compliance Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

DEP File Number:

091-0304 Provided by DEP

#### A. Project Information

#### Important: When filling out forms on the computer, use

only the tab key to move your cursor do not use the return key.





2

4

5

Upon completion 3. of the work authorized in an Order of Conditions, the property owner must request a Certificate of Compliance from the issuing authority stating that the work or portion of the work has been satisfactorily completed.

Mr. Joseph Connelly, Town of Arlington Name	Director of Recreation	
422 Summer Street		
Mailing Address		
Arlington	MA	02474
City/Town	State	Zip Code
781-316-3880 jconnelly@town.arlington	n.ma.us	
Phone Number		
This request is in reference to work regu	ulated by a final Order of Conditions issu	ued to:
Arlington Recreation Department	,	
Applicant Applicant		
01/04/2019	091-0304	
Dated	DEP File Number	r
The president site is leasted at:		
The project site is located at:		
Arlington Reservoir-off Lowell Street	Arlington	
Street Address	City/Town	
Street Address	City/Town 1-4 Parcel/Lot Number	er
Street Address 61 Assessors Map/Plat Number The final Order of Conditions was record Property Owner (if different)	City/Town 1-4 Parcel/Lot Number	er
Street Address 61 Assessors Map/Plat Number The final Order of Conditions was record	City/Town 1-4 Parcel/Lot Number	er Page
Street Address 61 Assessors Map/Plat Number The final Order of Conditions was record Property Owner (if different) Middlesex South County	City/Town  1-4 Parcel/Lot Number  ded at the Registry of Deeds for:	
Street Address 61 Assessors Map/Plat Number The final Order of Conditions was record Property Owner (if different) Middlesex South County Certificate (if registered land)	City/Town 1-4 Parcel/Lot Number  ded at the Registry of Deeds for:  Book	
Street Address 61 Assessors Map/Plat Number The final Order of Conditions was record Property Owner (if different) Middlesex South County	City/Town 1-4 Parcel/Lot Number  ded at the Registry of Deeds for:  Book	
Street Address 61 Assessors Map/Plat Number The final Order of Conditions was record Property Owner (if different) Middlesex South County  Certificate (if registered land) This request is for certification that (chemostree)	City/Town 1-4 Parcel/Lot Number  ded at the Registry of Deeds for:  Book	Page
Street Address 61 Assessors Map/Plat Number The final Order of Conditions was record Property Owner (if different) Middlesex South County  Certificate (if registered land) This request is for certification that (check the work regulated by the above-reference to the following portions of the work regulated (use a	City/Town 1-4 Parcel/Lot Number  ded at the Registry of Deeds for:  Book  ck one): erenced Order of Conditions has been say	Page  atisfactorily completed of Conditions have
Street Address 61 Assessors Map/Plat Number The final Order of Conditions was record Property Owner (if different) Middlesex South County  Certificate (if registered land) This request is for certification that (check the work regulated by the above-reference to the following portions of the work regulated (use a	City/Town 1-4 Parcel/Lot Number  ded at the Registry of Deeds for:  Book  ck one): erenced Order of Conditions has been saying a continuous paper if necessary).	Page  atisfactorily completed of Conditions have
Street Address 61 Assessors Map/Plat Number The final Order of Conditions was record Property Owner (if different) Middlesex South County  Certificate (if registered land) This request is for certification that (check the work regulated by the above-reference to the following portions of the work regulated (use a	City/Town 1-4 Parcel/Lot Number  ded at the Registry of Deeds for:  Book  ck one): erenced Order of Conditions has been saying a continuous paper if necessary).	Page  atisfactorily completed of Conditions have

work regulated by it was never started.



#### WPA Form 8A - Request for Certificate of Compliance

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

DEP File Number:

091-0304 Provided by DEP

#### A. Project Information (cont.)

	of Conditions for this project, or the portion of the project subject to this request, contain any plans stamped by a registered professional engineer, architect, landscape nd surveyor?
⊠ Yes	If yes, attach a written statement by such a professional certifying substantial compliance with the plans and describing what deviation, if any, exists from the plans approved in the Order.
☐ No	

#### **B. Submittal Requirements**

Requests for Certificates of Compliance should be directed to the issuing authority that issued the final Order of Conditions (OOC). If the project received an OOC from the Conservation Commission, submit this request to that Commission. If the project was issued a Superseding Order of Conditions or was the subject of an Adjudicatory Hearing Final Decision, submit this request to the appropriate DEP Regional Office (see <a href="http://www.mass.gov/eea/agencies/massdep/about/contacts/find-the-massdep-regional-office-for-your-city-or-town.html">http://www.mass.gov/eea/agencies/massdep/about/contacts/find-the-massdep-regional-office-for-your-city-or-town.html</a>).



#### WPA Form 5 - Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP	:
MassDEP File #	

091-0304 eDFP Transaction

eDEP Transaction #

Arlington City/Town

#### A. General Information

Latitude and Longitude, if known:

Please note:
this form has
been modified
with added
space to
accommodate
the Registry
of Deeds
Requirements

Important:
When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



		D
Ш		П
Ш	return	П
V		V

1. From: Arlington Conservation Commission		
2 This issuance is for	f Conditions b.  Amended	Order of Conditions
3. To: Applicant:		
Jon	Marshall	
a. First Name	b. Last Name	
Arlington Recreation Department		
c. Organization		
422 Summer Street		
d. Mailing Address		
Arlington	MA	02474
e. City/Town	f. State	g. Zip Code
Property Owner (if different from applicant):     a. First Name	b. Last Name	
c. Organization		
d. Mailing Address		
e. City/Town	f. State	g. Zip Code
5. Project Location:		
Arlington Reservoir- Off Lowell Street	Arlington/Lexington	
a. Street Address	b. City/Town	
61	1-4	
c. Assessors Map/Plat Number	d. Parcel/Lot Number	

wpaform5.doc • rev. 6/16/2015 Page 1 of 12

42d25m47.12s

d. Latitude

71d11m15.59s

e. Longitude



#### **WPA Form 5 – Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
MassDEP File #
091-0304
eDEP Transaction #
Arlington
City/Town

#### A. General Information (cont.)

6.	Property recorded at the Registry of Deeds for (attach additional information if more than one parcel):  Middlesex South									
	a. County					b. Certificate Number (if registered land)				
	c. Book					d. Page				
7.	Dates:	12/05/2018				3/2019			1/4/2019	
1.	Dates.	a. Date Notice of Into	ent File	ed	b. Da	te Public Hearing Cl	osed	(	c. Date of Issuance	
8.	as needed Overall Pl				·		plan	or d	ocument reference	
	a. Plan Title									
	MES					Cherilyn Ruane				
	b. Prepared	Ву				c. Signed and Star	nped	by		
						1"=80'				
	d. Final Revi	ision Date				e. Scale				
	See Attac							. '	Various	
	f. Additional	Plan or Document Titl	е					(	g. Date	
1.	Following provided i the areas	oursuant to the Ma the review of the n this application in in which work is p	above and poropos	e-re res sed	ferenced ented at the is signification	Notice of Intent a ne public hearing	nd b , this	Cor	d on the information mmission finds that sts of the Wetlands	
		Act (the Act). Ch	eck a	II th			C.	$\square$	Prevention of	
a.	□ Public	: Water Supply	b.		Land Cor	taining Shellfish	O.	Pol	lution	
d.		e Water Supply	e.		Fisheries		f.	_	Protection of dlife Habitat	
g.	⊠ Grour	ndwater Supply	h.	$\boxtimes$	Storm Da	mage Prevention	٦ i.	$\boxtimes$	Flood Control	
2.	This Comr	mission hereby find	ds the	pro	ject, as pr	oposed, is: (check	one	of th	ne following boxes)	
Аp	<b>proved</b> sul	oject to:								
a.	standards be perform General C that the fo	ned in accordance	etland with y othe mod	ds re the er s ify o	egulations Notice of pecial cor or differ fro	. This Commission Intent reference ditions attached om the plans, specifications.	on or d ab to th ecific	rders ove, iis O atior	that all work shall the following rder. To the extent as, or other	

wpaform5.doc • rev. 6/16/2015 Page 2 of 12



#### WPA Form 5 - Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
MassDEP File #
091-0304
eDEP Transaction #
Arlington
City/Town

#### B. Findings (cont.)

Don	hai	heca	
Den	1ea	neca	HSO:

b.	the proposed work cannot be conditioned to meet the performance standards set forth in the wetland regulations. Therefore, work on this project may not go forward unless and until a new Notice of Intent is submitted which provides measures which are adequate to protect the interests of the Act, and a final Order of Conditions is issued. A description of the performance standards which the proposed work cannot meet is attached to this Order.
c.	the information submitted by the applicant is not sufficient to describe the site, the work, or the effect of the work on the interests identified in the Wetlands Protection Act.  Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides sufficient information and includes measures which are adequate to protect the Act's interests, and a final Order of Conditions is issued. A description of the specific information which is lacking and why it is necessary is attached to this Order as per 310 CMR 10.05(6)(c).
3.	☐ Buffer Zone Impacts: Shortest distance between limit of project disturbance and the wetland resource area specified in 310 CMR 10.02(1)(a)  a. linear feet

Inland Resource Area Impacts: Check all that apply below. (For Approvals Only)

Resource Area	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
4. 🛛 Bank	a. linear feet	b. linear feet	c. linear feet	d. linear feet
5. Bordering Vegetated Wetland	a. square feet	b. square feet	c. square feet	d. square feet
6. \( \sum \) Land Under	3534	3534		
Waterbodies and Waterways	a. square feet 0	<ul><li>b. square feet</li><li>0</li></ul>	c. square feet	d. square feet
a.c a j	e. c/y dredged	f. c/y dredged		
7. Bordering Land	2725	2725		d agreement and
Subject to Flooding	a. square feet 0	<ul><li>b. square feet</li><li>0</li></ul>	c. square feet	d. square feet
Cubic Feet Flood Storage	e. cubic feet	f. cubic feet	g. cubic feet	h. cubic feet
<ol> <li>Isolated Land</li> <li>Subject to Flooding</li> </ol>	a. square feet	b. square feet		
Cubic Feet Flood Storage	c. cubic feet	d. cubic feet	e. cubic feet	f. cubic feet
9. Riverfront Area	a. total sq. feet	b. total sq. feet		
Sq ft within 100 ft	c. square feet	d. square feet	e. square feet	f. square feet
Sq ft between 100- 200 ft	g. square feet	h. square feet	i. square feet	j. square feet

wpaform5.doc • rev. 6/16/2015 Page 3 of 12



#### **WPA Form 5 – Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
MassDEP File #
091-0304
eDEP Transaction #
Arlington
Citv/Town

#### B. Findings (cont.)

Coastal Resource Area Impacts: Check all that apply below. (For Approvals Only)

		Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
10.	☐ Designated Port Areas	Indicate size u	ınder Land Unde	er the Ocean, bel	low
11.	Land Under the				
	Ocean	a. square feet	b. square feet		
		c. c/y dredged	d. c/y dredged		
12.	☐ Barrier Beaches	Indicate size ι below	ınder Coastal Be	eaches and/or Co	pastal Dunes
13.	Coastal Beaches			cu yd	cu yd
13.	Coastal Deaches	a. square feet	b. square feet	c. nourishment	d. nourishment
14.	☐ Coastal Dunes	a. square feet	b. square feet	cu yd c. nourishment	cu yd d. nourishment
15.	☐ Coastal Banks	a. linear feet	b. linear feet		
16.	☐ Rocky Intertidal Shores	a. square feet	b. square feet		
17.	☐ Salt Marshes	a. square feet	b. square feet	c. square feet	d. square feet
18.	☐ Land Under Salt Ponds	a. square feet	b. square feet		
		c. c/y dredged	d. c/y dredged		
19.	Land Containing Shellfish	a. square feet	b. square feet	c. square feet	d. square feet
20.	Fish Runs		d/or inland Land	anks, Inland Banl d Under Waterbo	
21.	☐ Land Subject to	a. c/y dredged	b. c/y dredged		
۷۱.	Coastal Storm Flowage	a. square feet	b. square feet		
22.	☐ Riverfront Area	a. total sq. feet	b. total sq. feet		
	Sq ft within 100 ft	c. square feet	d. square feet	e. square feet	f. square feet
	Sq ft between 100- 200 ft	g. square feet	h. square feet	i. square feet	j. square feet

wpaform5.doc • rev. 6/16/2015 Page 4 of 12



#### WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Tovided by Massber .	
MassDEP File #	
091-0304	
DEP Transaction #	
Arlington	
City/Town	

Provided by MassDED.

#### B. Findings (cont.)

* #23. If the	23.
project is for	20.
the purpose of	
restoring or	
enhancing a	
wetland	0.4
resource area	24.
in addition to	
the square	
footage that	
has been	C
entered in	•
Section B.5.c	
(BVW) or	Th
B.17.c (Salt	• • •
Marsh) above,	1.
please enter	٠.
the additional	
amount here.	2.

23. Restoration/Enhancement *:	
a. square feet of BVW	b. square feet of salt marsh
24. Stream Crossing(s):	
a. number of new stream crossings	b. number of replacement stream crossings

#### C. General Conditions Under Massachusetts Wetlands Protection Act

#### The following conditions are only applicable to Approved projects.

- 1. Failure to comply with all conditions stated herein, and with all related statutes and other regulatory measures, shall be deemed cause to revoke or modify this Order.
- 2. The Order does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of private rights.
- 3. This Order does not relieve the permittee or any other person of the necessity of complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.
- 4. The work authorized hereunder shall be completed within three years from the date of this Order unless either of the following apply:
  - a. The work is a maintenance dredging project as provided for in the Act; or
  - b. The time for completion has been extended to a specified date more than three years, but less than five years, from the date of issuance. If this Order is intended to be valid for more than three years, the extension date and the special circumstances warranting the extended time period are set forth as a special condition in this Order.
  - c. If the work is for a Test Project, this Order of Conditions shall be valid for no more than one year.
- 5. This Order may be extended by the issuing authority for one or more periods of up to three years each upon application to the issuing authority at least 30 days prior to the expiration date of the Order. An Order of Conditions for a Test Project may be extended for one additional year only upon written application by the applicant, subject to the provisions of 310 CMR 10.05(11)(f).
- 6. If this Order constitutes an Amended Order of Conditions, this Amended Order of Conditions does not extend the issuance date of the original Final Order of Conditions and the Order will expire on <a href="https://dx.doi.org/10.4/2022">1/04/2022</a> unless extended in writing by the Department.
- 7. Any fill used in connection with this project shall be clean fill. Any fill shall contain no trash, refuse, rubbish, or debris, including but not limited to lumber, bricks, plaster, wire, lath, paper, cardboard, pipe, tires, ashes, refrigerators, motor vehicles, or parts of any of the foregoing.

wpaform5.doc • rev. 6/16/2015 Page 5 of 12



#### WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

MassDEP File #
091-0304
eDEP Transaction #
Arlington
City/Town

Provided by MassDEP:

#### C. General Conditions Under Massachusetts Wetlands Protection Act

- 8. This Order is not final until all administrative appeal periods from this Order have elapsed, or if such an appeal has been taken, until all proceedings before the Department have been completed.
- 9. No work shall be undertaken until the Order has become final and then has been recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land upon which the proposed work is to be done. In the case of the registered land, the Final Order shall also be noted on the Land Court Certificate of Title of the owner of the land upon which the proposed work is done. The recording information shall be submitted to the Conservation Commission on the form at the end of this Order, which form must be stamped by the Registry of Deeds, prior to the commencement of work.
- 10. A sign shall be displayed at the site not less then two square feet or more than three square feet in size bearing the words,

"Massachusetts Department o	f Environmenta	I Protection"	[or, "MassDEP"]
"File Number	091-0304	"	

- 11. Where the Department of Environmental Protection is requested to issue a Superseding Order, the Conservation Commission shall be a party to all agency proceedings and hearings before MassDEP.
- 12. Upon completion of the work described herein, the applicant shall submit a Request for Certificate of Compliance (WPA Form 8A) to the Conservation Commission.
- 13. The work shall conform to the plans and special conditions referenced in this order.
- 14. Any change to the plans identified in Condition #13 above shall require the applicant to inquire of the Conservation Commission in writing whether the change is significant enough to require the filing of a new Notice of Intent.
- 15. The Agent or members of the Conservation Commission and the Department of Environmental Protection shall have the right to enter and inspect the area subject to this Order at reasonable hours to evaluate compliance with the conditions stated in this Order, and may require the submittal of any data deemed necessary by the Conservation Commission or Department for that evaluation.
- 16. This Order of Conditions shall apply to any successor in interest or successor in control of the property subject to this Order and to any contractor or other person performing work conditioned by this Order.

wpaform5.doc • rev. 6/16/2015 Page 6 of 12



#### WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

MassDEP File #
091-0304
eDEP Transaction #
Arlington

City/Town

Provided by MassDEP:

#### C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

- 17. Prior to the start of work, and if the project involves work adjacent to a Bordering Vegetated Wetland, the boundary of the wetland in the vicinity of the proposed work area shall be marked by wooden stakes or flagging. Once in place, the wetland boundary markers shall be maintained until a Certificate of Compliance has been issued by the Conservation Commission.
- 18. All sedimentation barriers shall be maintained in good repair until all disturbed areas have been fully stabilized with vegetation or other means. At no time shall sediments be deposited in a wetland or water body. During construction, the applicant or his/her designee shall inspect the erosion controls on a daily basis and shall remove accumulated sediments as needed. The applicant shall immediately control any erosion problems that occur at the site and shall also immediately notify the Conservation Commission, which reserves the right to require additional erosion and/or damage prevention controls it may deem necessary. Sedimentation barriers shall serve as the limit of work unless another limit of work line has been approved by this Order.

19.	The wo	rk associated with this Order (the "Project")
	(1)	is subject to the Massachusetts Stormwater Standards
	(2)	is NOT subject to the Massachusetts Stormwater Standards

### If the work is subject to the Stormwater Standards, then the project is subject to the following conditions:

- a) All work, including site preparation, land disturbance, construction and redevelopment, shall be implemented in accordance with the construction period pollution prevention and erosion and sedimentation control plan and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Construction General Permit as required by Stormwater Condition 8. Construction period erosion, sedimentation and pollution control measures and best management practices (BMPs) shall remain in place until the site is fully stabilized.
- b) No stormwater runoff may be discharged to the post-construction stormwater BMPs unless and until a Registered Professional Engineer provides a Certification that: *i.* all construction period BMPs have been removed or will be removed by a date certain specified in the Certification. For any construction period BMPs intended to be converted to post construction operation for stormwater attenuation, recharge, and/or treatment, the conversion is allowed by the MassDEP Stormwater Handbook BMP specifications and that the BMP has been properly cleaned or prepared for post construction operation, including removal of all construction period sediment trapped in inlet and outlet control structures; *ii.* as-built final construction BMP plans are included, signed and stamped by a Registered Professional Engineer, certifying the site is fully stabilized;
- *iii.* any illicit discharges to the stormwater management system have been removed, as per the requirements of Stormwater Standard 10;

wpaform5.doc • rev. 6/16/2015 Page 7 of 12



#### **WPA Form 5 – Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File #
091-0304
eDEP Transaction #
Arlington
City/Town

#### C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

*iv.* all post-construction stormwater BMPs are installed in accordance with the plans (including all planting plans) approved by the issuing authority, and have been inspected to ensure that they are not damaged and that they are in proper working condition;

*v.* any vegetation associated with post-construction BMPs is suitably established to withstand erosion.

- c) The landowner is responsible for BMP maintenance until the issuing authority is notified that another party has legally assumed responsibility for BMP maintenance. Prior to requesting a Certificate of Compliance, or Partial Certificate of Compliance, the responsible party (defined in General Condition 18(e)) shall execute and submit to the issuing authority an Operation and Maintenance Compliance Statement ("O&M Statement) for the Stormwater BMPs identifying the party responsible for implementing the stormwater BMP Operation and Maintenance Plan ("O&M Plan") and certifying the following:
  - i.) the O&M Plan is complete and will be implemented upon receipt of the Certificate of Compliance, and
  - ii.) the future responsible parties shall be notified in writing of their ongoing legal responsibility to operate and maintain the stormwater management BMPs and implement the Stormwater Pollution Prevention Plan.
- d) Post-construction pollution prevention and source control shall be implemented in accordance with the long-term pollution prevention plan section of the approved Stormwater Report and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Multi-Sector General Permit.
- e) Unless and until another party accepts responsibility, the landowner, or owner of any drainage easement, assumes responsibility for maintaining each BMP. To overcome this presumption, the landowner of the property must submit to the issuing authority a legally binding agreement of record, acceptable to the issuing authority, evidencing that another entity has accepted responsibility for maintaining the BMP, and that the proposed responsible party shall be treated as a permittee for purposes of implementing the requirements of Conditions 18(f) through 18(k) with respect to that BMP. Any failure of the proposed responsible party to implement the requirements of Conditions 18(f) through 18(k) with respect to that BMP shall be a violation of the Order of Conditions or Certificate of Compliance. In the case of stormwater BMPs that are serving more than one lot, the legally binding agreement shall also identify the lots that will be serviced by the stormwater BMPs. A plan and easement deed that grants the responsible party access to perform the required operation and maintenance must be submitted along with the legally binding agreement.
- f) The responsible party shall operate and maintain all stormwater BMPs in accordance with the design plans, the O&M Plan, and the requirements of the Massachusetts Stormwater Handbook.

wpaform5.doc • rev. 6/16/2015 Page 8 of 12



#### WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File #
091-0304
eDEP Transaction #
Arlington

City/Town

#### C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

- g) The responsible party shall:
  - 1. Maintain an operation and maintenance log for the last three (3) consecutive calendar years of inspections, repairs, maintenance and/or replacement of the stormwater management system or any part thereof, and disposal (for disposal the log shall indicate the type of material and the disposal location):
  - 2. Make the maintenance log available to MassDEP and the Conservation Commission ("Commission") upon request; and
  - 3. Allow members and agents of the MassDEP and the Commission to enter and inspect the site to evaluate and ensure that the responsible party is in compliance with the requirements for each BMP established in the O&M Plan approved by the issuing authority.
- h) All sediment or other contaminants removed from stormwater BMPs shall be disposed of in accordance with all applicable federal, state, and local laws and regulations.
- i) Illicit discharges to the stormwater management system as defined in 310 CMR 10.04 are prohibited.
- j) The stormwater management system approved in the Order of Conditions shall not be changed without the prior written approval of the issuing authority.
- k) Areas designated as qualifying pervious areas for the purpose of the Low Impact Site Design Credit (as defined in the MassDEP Stormwater Handbook, Volume 3, Chapter 1, Low Impact Development Site Design Credits) shall not be altered without the prior written approval of the issuing authority.
- I) Access for maintenance, repair, and/or replacement of BMPs shall not be withheld. Any fencing constructed around stormwater BMPs shall include access gates and shall be at least six inches above grade to allow for wildlife passage.

Special Conditions (if you need more space for additional conditions, please attach a text document):	t			
See Attached Findings and Conditions				

20. For Test Projects subject to 310 CMR 10.05(11), the applicant shall also implement the monitoring plan and the restoration plan submitted with the Notice of Intent. If the conservation commission or Department determines that the Test Project threatens the public health, safety or the environment, the applicant shall implement the removal plan submitted with the Notice of Intent or modify the project as directed by the conservation commission or the Department.

wpaform5.doc • rev. 6/16/2015 Page 9 of 12



#### **WPA Form 5 – Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
MassDEP File #
091-0304
eDEP Transaction #
Arlington
City/Town

#### D. Findings Under Municipal Wetlands Bylaw or Ordinance

1.	. Is a municipal wetlands bylaw or ordinance applicable? ⊠ Yes □ No						
2.	The	Arlington Conservation Commission	here	eby finds (	check one	that applies):	
	a.	that the proposed work cannot be condition municipal ordinance or bylaw, specifically:	ned to	meet the s	standards	set forth in a	
		1. Municipal Ordinance or Bylaw				2. Citation	
		Therefore, work on this project may not go for Intent is submitted which provides measures was standards, and a final Order of Conditions is is	which a				
	b.	ordinance or bylaw:					
		Arlington Bylaw for Wetlands Protection  1. Municipal Ordinance or Bylaw				Title V, Art 8	
<ol> <li>The Commission orders that all work shall be performed in accordance w conditions and with the Notice of Intent referenced above. To the extent t conditions modify or differ from the plans, specifications, or other proposa the Notice of Intent, the conditions shall control.</li> </ol>			extent that proposals s	the following submitted with			
more space for addition		special conditions relating to municipal ordina e space for additional conditions, attach a text Attached Findings and Conditions			as follows	s (if you need	

wpaform5.doc • rev. 6/16/2015 Page 10 of 12



#### **WPA Form 5 – Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
MassDEP File #
091-0304
eDEP Transaction #
Arlington
Citv/Town

#### E. Signatures

This Order is valid for three years, unless otherwise specified as a special condition pursuant to General Conditions #4, from the date of issuance.

Please indicate the number of members who will sign this form.

This Order must be signed by a majority of the Conservation Commission.

1. Date of Issuance
2. Number of Signers

The Order must be mailed by certified mail (return receipt requested) or hand delivered to the applicant. A copy also must be mailed or hand delivered at the same time to the appropriate Department of Environmental Protection Regional Office, if not filing electronically, and the property owner, if different from applicant.

Signatures:	-
	_
☐ by hand delivery on	by certified mail, return receipt requested, on
Date	Date

#### F. Appeals

The applicant, the owner, any person aggrieved by this Order, any owner of land abutting the land subject to this Order, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate MassDEP Regional Office to issue a Superseding Order of Conditions. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and a completed Request for Departmental Action Fee Transmittal Form, as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Order. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.

Any appellants seeking to appeal the Department's Superseding Order associated with this appeal will be required to demonstrate prior participation in the review of this project. Previous participation in the permit proceeding means the submission of written information to the Conservation Commission prior to the close of the public hearing, requesting a Superseding Order, or providing written information to the Department prior to issuance of a Superseding Order.

The request shall state clearly and concisely the objections to the Order which is being appealed and how the Order does not contribute to the protection of the interests identified in the Massachusetts Wetlands Protection Act (M.G.L. c. 131, § 40), and is inconsistent with the wetlands regulations (310 CMR 10.00). To the extent that the Order is based on a municipal ordinance or bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.

wpaform5.doc • rev. 6/16/2015 Page 11 of 12



#### **WPA Form 5 – Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File #

091-0304

eDEP Transaction #

Arlington

City/Town

#### **G.** Recording Information

Prior to commencement of work, this Order of Conditions must be recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land subject to the Order. In the case of registered land, this Order shall also be noted on the Land Court Certificate of Title of the owner of the land subject to the Order of Conditions. The recording information on this page shall be submitted to the Conservation Commission listed below.

Arlington		
Conservation Commission		
Detach on dotted line, have stamped by the Regist Commission.	ry of Deeds and su	ubmit to the Conservation
То:		
Arlington Conservation Commission		
Please be advised that the Order of Conditions fo	r the Project at:	
Arlington Reservoir- Off Lowell Street	The beadvised that the Order of Conditions for the Project at:  In Ington Reservoir- Off Lowell Street O91-0304  Indicated Registry of Deeds of:  In Indicated Registry of Dee	nher
Has been recorded at the Registry of Deeds of:	Massa I I I I I I I I I I I I I I I I I I	
Middlesex South	_	
County	Book	Page
for: Property Owner		
and has been noted in the chain of title of the affe	cted property in:	
Book	Page	
In accordance with the Order of Conditions issued	d on:	
Date		
If recorded land, the instrument number identifying	g this transaction i	s:
Instrument Number		
If registered land, the document number identifying	g this transaction	is:
Document Number		
Signature of Applicant		

wpaform5.doc • rev. 6/16/2015 Page 12 of 12



Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.

#### **Massachusetts Department of Environmental Protection** Bureau of Resource Protection - Wetlands

#### **Request for Departmental Action Fee Transmittal Form**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

DEP File Number:	
Provided by DEP	_

#### A. Request Information

a. Street Address	b. City/Town, Zip	
c. Check number	d. Fee amount	
Person or party making request	(if appropriate, name the citizen group's repres	sentative):
Name		
Mailing Address		
City/Town	State	Zip Code
Phone Number	Fax Number (if a	pplicable)
Applicant (as shown on Determine	Fax Number (if a nation of Applicability (Form 2), Order of Resource Form 5), Restoration Order of Conditions (Form	urce Area Delinea
Applicant (as shown on Determine (Form 4B), Order of Conditions (	nation of Applicability (Form 2), Order of Resou	urce Area Delinea
Applicant (as shown on Determin (Form 4B), Order of Conditions ( Non-Significance (Form 6)):	nation of Applicability (Form 2), Order of Resou	urce Area Delinea
Applicant (as shown on Determin (Form 4B), Order of Conditions (Non-Significance (Form 6)):	nation of Applicability (Form 2), Order of Resou	urce Area Delinea
Applicant (as shown on Determin (Form 4B), Order of Conditions (Non-Significance (Form 6)):  Name  Mailing Address	nation of Applicability (Form 2), Order of Resou Form 5), Restoration Order of Conditions (For	urce Area Delinea m 5A), or Notice o

#### **B.** Instructions

1.

When the Departmental action request is for (check one):
☐ Superseding Order of Conditions – Fee: \$120.00 (single family house projects) or \$245 (all other projects)
☐ Superseding Determination of Applicability – Fee: \$120
☐ Superseding Order of Resource Area Delineation – Fee: \$120

wpaform5.doc • rev. 4/22/2015 Page 1 of 2



# Request for Departmental Action Fee Transmittal Form

Provided	by	DEP

DEP File Number:

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

B. Instructions (cont.)

Send this form and check or money order, payable to the Commonwealth of Massachusetts, to:

Department of Environmental Protection Box 4062 Boston, MA 02211

- 2. On a separate sheet attached to this form, state clearly and concisely the objections to the Determination or Order which is being appealed. To the extent that the Determination or Order is based on a municipal bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.
- 3. Send a **copy** of this form and a **copy** of the check or money order with the Request for a Superseding Determination or Order by certified mail or hand delivery to the appropriate DEP Regional Office (see <a href="http://www.mass.gov/eea/agencies/massdep/about/contacts/">http://www.mass.gov/eea/agencies/massdep/about/contacts/</a>).
- 4. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.

wpaform5.doc • rev. 4/22/2015 Page 2 of 2

APPROVAL ORDER OF CONDITIONS

ARLINGTON RESERVOIR BEACH IMPROVEMENTS

DEP FILE NO. 091-0304

#### **DOCUMENTS REVIEWED**

- Notice of Intent for Arlington Reservoir Bathing Beach Improvements and Walk Path Improvement Pilot Test, Arlington, MA, prepared by Weston & Sampson, for the Applicant: Town of Arlington Recreation Department, dated December 5, 2018.
- 2. Stormwater Report, prepared by James I. Pearson, P.E., dated December 3, 2018.
- 3. Construction Period Pollution Prevention and Erosion and Sediment Control Plan, prepared by Weston & Sampson, not dated.
- 4. Locus Map, prepared by Weston and Sampson, not dated.
- 5. Environmental Receptors Map, prepared by Weston & Sampson, not dated.
- 6. FEMA National Flood Hazard Layer FIRMette, prepared by Weston & Sampson, dated October 18, 2018.
- 7. Dust Control SOP, prepared by Weston & Sampson, dated 07/12/2012.
- 8. Environmental Protection SOP, prepared by Weston & Sampson, dated 8/25/2016.
- 9. Cleaning Up SOP, prepared by Weston & Sampson, dated 1/24/2018.
- 10. Wetland Delineation Report for the Arlington Reservoir, prepared by Weston & Sampson, dated 10/08/2018.
- 11. Town of Arlington Improvements to the Arlington Reservoir Plan Set, prepared by Weston & Sampson, stamped by Cherilyn Ruane RLA, Daniel Tenney RA, and Jeffrey Budrow PE, dated 11/20/2018, revised 01/03/2019.

#### PROCEDURAL SUMMARY

The Conservation Commission held a public hearing on the Notice of Intent on December 20, 2018. The Commission closed the hearing on January 3, 2019, deliberated and voted 6-0, with 1 member absent, to approve the Project with conditions under the Wetlands Protection Act (the "Act") and voted 6-0, with 1 member absent, to approve the Project with conditions under the Arlington Wetlands Protection Bylaw (the "Bylaw").

FINDINGS OF FACT AND LAW
UNDER ARLINGTON WETLANDS PROTECTION BYLAW
AND WETLANDS PROTECTION ACT

## APPROVAL ORDER OF CONDITIONS ARLINGTON RESERVOIR BEACH IMPROVEMENTS DEP FILE NO. 091-0304

- A. The Project as approved involves renovating the bathing beach's pump house through the installation of a sand filter system, suction system renovation, liquid chlorine pump upgrade, UV filtration system installation, skimming system installation, filter return system installation, and general building upgrades and weather-proofing. The pipe system and water filtration infrastructure under the beach will be upgraded. The project also includes the removal of an outdoor tank, which will require excavation and fill. The fill will consist of crushed rock. Once removed, the tank will be replace by a 30'-8" x 8' corrugated metal roof. No impervious surfaces will be created below the corrugated metal roof. Due to roof construction, 2 mulberry trees will be removed and replaced with 10 pagoda dogwoods.
- B. The Project site contains approximately 2,725 square feet of temporary impact in Bordering Land Subject to Flooding/100 Year Flood Zone. Approximately 22 linear feet of bank will also be temporarily impacted. Approximately 3,534 square feet of land under waterbodies and waterways will be temporarily impacted.
- C. The following Resource Areas are present on the site or within 100 feet of the project limit of work: Land Under Waterbodies and Waterways (Act), Bank (Act), Buffer Zone (Act) to Bank, Bordering Land Subject to Flooding (Act), and 100 Year Flood Zone (Act). The Commission finds accurate the delineation of Resource Areas shown on the approved Site Plan.
- D. Flood zone volume and grading will be the same upon project completion as it was during pre-construction conditions, so compensatory storage is not required. No volume will be added within the flood zone.
- E. The Project as approved is subject to the Massachusetts Stormwater Standards.
- F. Because work proposed does not increase impervious surface, the Commission finds the project meets the performance standards for the aforementioned Resource Areas.
- G. Based on the testimony at the public hearing, and review of the application materials and the documents listed above submitted during the public hearing, the Commission concludes that the proposed Project will not alter Resource Areas under the Act and Bylaw, the work as conditioned will not have significant or cumulative effects upon the interests of the Wetlands Protection Act or the Resource Area values of the Arlington Wetlands Bylaw when the conditions imposed are implemented to protect the Resource Area values. With the conditions contained herein, the Project meets the performance standards in the Bylaw Regulations and state Wetlands Regulations, 310 CMR 10.00.

#### **Additional Special Conditions**

In addition to the General Conditions (numbered 1 - 20 above), the Project is subject to the following Additional Special Conditions (under both the Act and Bylaw):

#### APPROVAL ORDER OF CONDITIONS

ARLINGTON RESERVOIR BEACH IMPROVEMENTS

DEP FILE NO. 091-0304

#### **Pre-Construction**

- 21. Work permitted by this Order and Permit shall conform to the Notice of Intent, the approved plans and documents (listed above), and oral representations (as recorded in hearing minutes) submitted or made by the Applicant and the Applicant's agents or representatives, as well as any plans and other data, information or representations submitted per these Conditions and approved by the Commission.
- 22. The provisions of this Order and Permit shall apply to and be binding upon the Applicant and Applicant's assignees, tenants, property management company, employees, contractors, and agents.
- 23. No work shall be started under this Order until: (a) all other required permits or approvals have been obtained and (b) the appeal period of ten (10) business days from the date of issue of this Order has expired without any appeal being filed and (c) this Order has been recorded in the Registry of Deeds. No work shall be started under this Permit until all other necessary permits or approvals have been obtained.
- 24. The Applicant shall ensure that a copy of this Order of Conditions and Permit for work, with any referenced plans, is available on site at all times, and that contractors, site managers, foremen, and sub-contractors understand its provisions.
- 25. Prior to starting work, the Applicant shall submit to the Commission the names and 24-hour phone numbers of project managers or the persons responsible for site work or mitigation.
- 26. Before work begins, erosion and sediment controls shall be installed at the limits of the work area. These will include a silt fence and 12 inch straw or silt wattle around the entire work area (hay bales are not allowed and silt socks are preferred).
- 27. The Applicant shall complete the proposed work during low flow conditions only.
- 28. The contractor shall contact the Conservation Agent (concomm@town.arlington.ma.us; 781-316-3012) to arrange for a pre-construction meeting with the on-site project manager to walk through the Order of Conditions, confirm the wash out location, and walk the site to confirm the installation and placement of erosion controls prior to the start of any grading or construction work.
- 29. The contractor shall provide written Notice of the work start date to the Conservation Agent 48 hours prior to start of work.
- 30. The Commission, its employees, and its agents shall have the right of entry onto the site to inspect for compliance with the terms of this Order of Conditions and Permit until a Certificate of Compliance has been issued.

#### **Post-Construction**

31. When requesting a Certificate of Compliance for this Order of Conditions, the Applicant must submit a written statement from a Massachusetts professional engineer, registered land surveyor, or registered landscape architect certifying that the completed work complies with the plans referenced in this Order, or provide an as-built plan and statement describing any differences.

#### APPROVAL ORDER OF CONDITIONS

ARLINGTON RESERVOIR BEACH IMPROVEMENTS

DEP FILE NO. 091-0304

#### **Dumpsters**

32. All dumpsters must be covered at the end of each work day, and no dumpsters will be allowed overnight within the 100 foot Buffer Zone or Adjacent Upland Resource Areas ("AURA") or other Resource Areas.

#### **Stockpiling**

33. No uncovered stockpiling of materials shall be permitted overnight within 100 feet of any waterway or water body. Stockpiling shall occur only where noted on approved plans.

#### **Erosion**

34. Areas that are disturbed by construction and access activities shall as soon as possible be brought to final grade and reseeded and restabilized, and shall be done so prior to the removal of the erosion control barrier. Erosion control measures shall be installed per the approved plans.

#### **Equipment**

- 35. No heavy equipment may be stored overnight within 50 feet of the wetland and no refueling or maintenance of machinery shall be allowed within the 100-foot Buffer Zone, 200-foot Resource Area, and Adjacent Upland Resource Area or within any Resource Area.
- 36. Construction entrances shall be used and maintained only where noted on approved plans.
- 37. Arrangements shall be made for any rinsing of tools, equipment, etc. associated with on–site mixing or use of concrete or other materials such that the waste water is disposed of in the concrete wash out station-at least 50 feet from the resource area. In no case may waste water be discharged into or onto Resource Areas on or adjacent to the site. In no case may waste water be placed in stormdrains. Any spillage of materials shall be cleaned up promptly.

#### Sweeping

38. Any dirt or debris spilled or tracked onto any paved streets shall be swept up and removed daily.

#### **Dewatering**

- 39. Any dewatering operations shall conform to the following:
  - (a) Notify the Conservation Commission that dewatering is required.
  - (b) Any catch basins, drain and outfalls to be used in dewatering operations shall be cleaned out before operations begin.
  - (c) Any water discharged as part of any dewatering operation shall be passed through filters, on-site settling basins, settling tank trucks, or other devices to ensure that no observable sediments or pollutants are carried into any Resource Area, street, drain or adjacent property.
  - (d) Measures shall be taken to ensure that no erosion or scouring shall occur on public or private property, or on the banks or bottoms of water bodies, as a result of dewatering operations.

Dewatering shall occur only where noted on approved plans.

#### **Plantings**

40. Prior to plant installation, the Applicant shall submit planting plan details to the Conservation Commission for approval. Planting details shall include plant sizes, Latin names, regular

APPROVAL ORDER OF CONDITIONS

ARLINGTON RESERVOIR BEACH IMPROVEMENTS

DEP FILE NO. 091-0304

names, number of plants, and transported method (containerized, balled-and-burlapped, etc.). All plantings shall be native and be installed and maintained according to the standards of the American Association of Nurserymen (AAN). This shall be a continuing condition that survives the expiration of the permit and shall be included in any Certificate of Compliance as a continuing condition.

41. The Applicant shall protect all area trees per the Town Wetlands Protection Regulations, Section 24 Vegetation Removal and Replacement, protecting trees through securing (not nailing) 2x4 boards, between 6-8 feet in length, around tree base. The boards shall be installed vertically such that one end is installed directly into the ground.

#### Chemicals

42. To avoid adding excess nitrogen runoff, the Applicant shall only treat the lawn with slow release nitrogen fertilizer. Application of this fertilizer cannot occur in the summer, or after storm events. Lawn fertilizer shall only be applied twice a year, in spring and fall. No herbicides shall be used to treat invasive or unwanted plants. New plantings shall only be fertilized once, during the initial planting year. No pesticides or rodenticides shall be used to treat pest management issues. This shall be a continuing condition that survives the expiration of the permit and shall be included in any Certificate of Compliance as a continuing condition.

#### **Pervious Surfaces**

43. Pervious surfaces shown on the project plans shall be maintained and not be replaced by impervious surfaces. This shall be a continuing condition that survives the expiration of the permit and shall be included in any Certificate of Compliance as a continuing condition.

#### Stormwater

- 44. The Applicant shall protect all adjacent catch basins using silt socks.
- 45. The Applicant shall conduct catch basin sump cleanings at the end of the project work period.



#### TOWN OF ARLINGTON

MASSACHUSETTS

#### CONSERVATION COMMISSION

#### **COC Internal Checklist – Arlington Conservation Agent**

Project Street Address: 210 Lowell Street, Arlington Reservoir DEP File No: 091-0304

**Applicant:** Arlington Park & Recreation Commission **Permit Issue Date:** 01/04/2019

As-Built plan submitted?	Yes (plans in Phase 2 NOI	□ No
	Submittal)	
As-Built plan stamped and	⊠ Yes	□ No
dated by a licensed		
professional?		
Written summary of changes		□ No
between approved plan and asbuilt plan?		
Bullet list of Summary of plan	N/A	
changes		
Is there a special condition in	31. When requesting a Certificate	Mickey Marcus is PWS, but
the OOC that states what must	of Compliance for this Order of	RLA stamped Phase 2 Plans
be submitted for this Request	Conditions, the Applicant must	
for Certificate of Compliance?	submit a written statement from a	
What is the language of that	Massachusetts professional	
special condition?	engineer, registered land surveyor,	
	or registered landscape architect	
	certifying that the completed work	
	complies with the plans	
	referenced in this Order, or provide	
	an as-built plan and statement	
	describing any differences.	
Special Conditions	#40. Prior to plant installation, the	
	Applicant shall submit planting plan	☐ Non-compliant
	details to the Conservation	
	Commission for approval. Planting	
	details shall include plant sizes,	
	Latin names, regular names,	
	number of plants, and transported	
	method (containerized, balled-and-	
	burlapped, etc.). All plantings shall	
	be native and be installed and	
	maintained according to the	

	1	
	standards of the American Association of Nurserymen (AAN). This shall be a continuing condition that survives the expiration of the permit and shall be included in any Certificate of Compliance as a continuing condition.	
	#42. To avoid adding excess nitrogen runoff, the Applicant shall only treat the lawn with slow release nitrogen fertilizer.  Application of this fertilizer cannot occur in the summer, or after storm events. Lawn fertilizer shall only be applied twice a year, in spring and fall. No herbicides shall be used to treat invasive or unwanted plants. New plantings shall only be fertilized once, during the initial planting year. No pesticides or rodenticides shall be used to treat pest management issues. This shall be a continuing condition that survives the expiration of the permit and shall be included in any Certificate of Compliance as a continuing condition.	□ Compliant     □ Non-compliant     Condition is in Phase 2 OOC
	#43. Pervious surfaces shown on the project plans shall be maintained and not be replaced by impervious surfaces. This shall be a continuing condition that survives the expiration of the permit and shall be included in any Certificate of Compliance as a continuing condition.	<ul><li>☑ Compliant</li><li>☐ Non-compliant</li><li>Condition is in Phase 2 OOC</li></ul>
Evaluate non-compliance(s) for Special Conditions and contact Applicant for resolution / additional information	<ul> <li>□ Applicant submitted additional information</li> <li>⋈ All Special Conditions compliant</li> </ul>	☐ Applicant cannot resolve Special Condition # xx; Contact Chair/Vice Chair for discussion of next steps
Agent perform site visit: Date of Site Visit = 2/9/2021	☑ Site visit and site conditions acceptable	☐Site visit and site conditions not acceptable

Conservation Agent's		☐ Do not issue Certificate of
recommendation	(any ongoing conditions)	Compliance

# TOWN OF ARLINGTON

# ARLINGTON RESERVOIR - PHASE 2

ARLINGTON, MASSACHUSETTS

# 100% DESIGN DEVELOPMENT SET

# DRAWING LIST

COVER SHEET

LO KEY PLAN

L1.1 - L1.5 SITE PREPARATION AND DEMO PLANS

L2.1 - L2.5 LAYOUT AND MATERIAL PLANS

L3.1 - L3.5 GRADING PLANS

L4.1 – L4.5 PLANTING PLANS
LD1.1 – LD1.9 LANDSCAPE DETAILS
C1.0 CIVIL DRAINAGE PLAN
C2.0 CIVIL DETAIL SHEETS

1.0 PROPOSED BANK RESTORATION AREAS

2.0 PROPOSED AREAS OF PHASE1 BANK RESTORATION

3.0 BANK RESTORATION SECTIONS 4.0 BANK RESTORATION DETAILS

5.0 BANK RESTORATION DETAILS AND NOTES

# PREPARED BY:

## LANDSCAPE ARCHITECT:

Kyle Zick Landscape Architecture, Inc.

36 Bromfield Street, Suite 202

Boston, MA 02108 617-451-1018 Tel www. kylezick.com

# ARCHITECT:

Bargmann Hendrie + Archetype, Inc.

9 Channel Center Street #300, Boston, MA 02210

617-350-0450 Tel 617-350-0215 Fax

# CIVIL ENGINEER:

Woodard & Curran, Inc.

980 Washington Street #325, Dedham, MA 02026 800-446-5518 Tel

# **ENVIRONMENTAL CONSULTING:**

**SWCA Environmental Consultants** 

15 Research Drive, Amherst, MA 01002 413-575-9883 Tel

ARLINGTONS
GREAT
MEJOONS

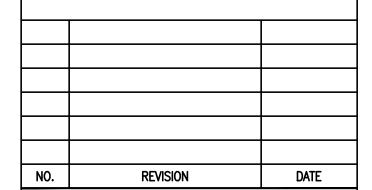
LOCATION MAP
Lowell Street/Arlington Reservoir

Arlington, MA

ARLINGTON RESERVOIR -PHASE 2

ARLINGTON, MASSACHUSETTS

TOWN OF ARLINGTON



kzla

Kyle Zick Landscape Architecture, Inc.
36 Bromfield Street Suite 202 617 451Boston, MA 02108 www.kyl



100% DESIGN DEVELOPMENT SET

Job Numbe

Project: ARLINGTON RE

Drawn By: JL/MD/RB

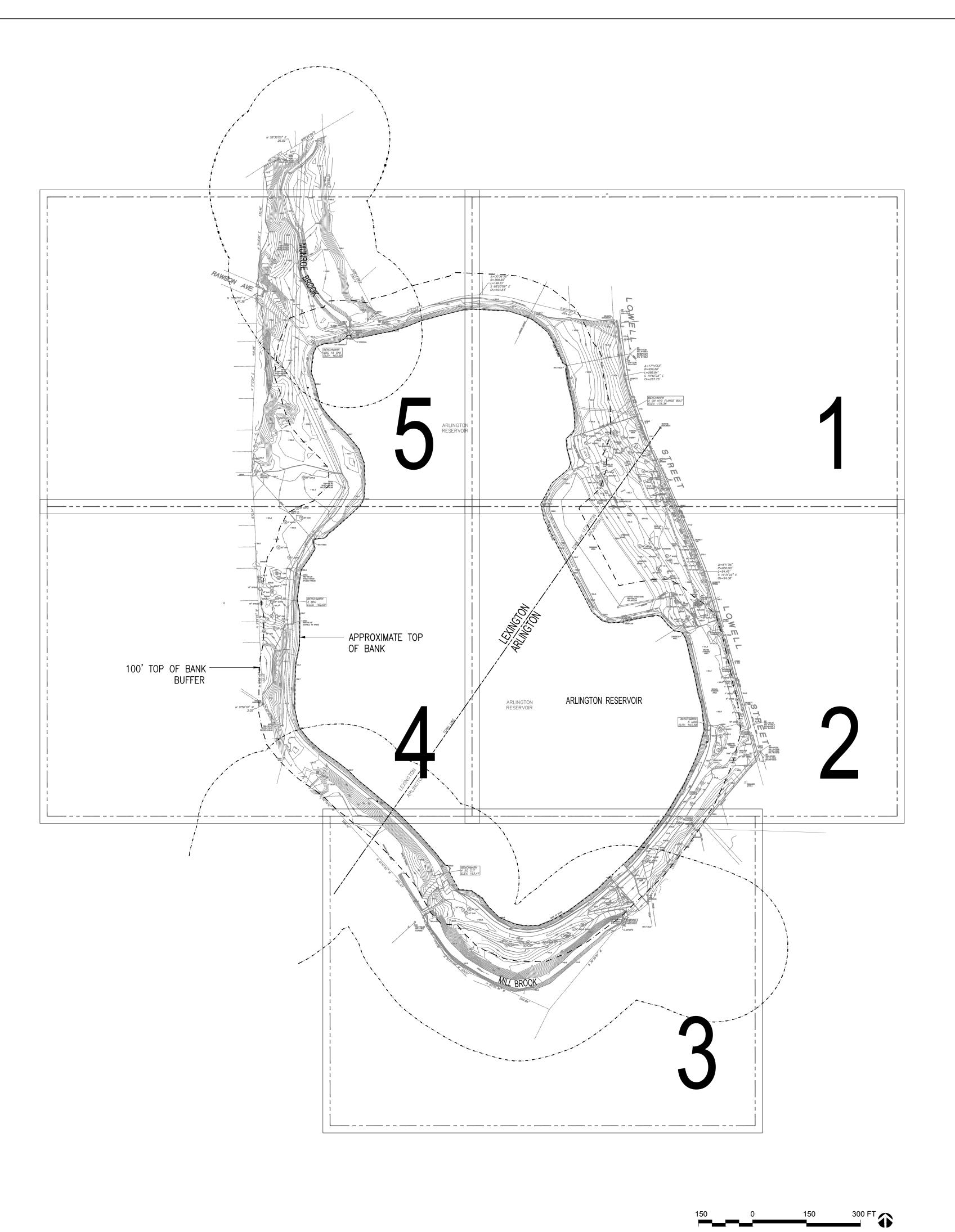
Date: NOVEMBER 13, 2020

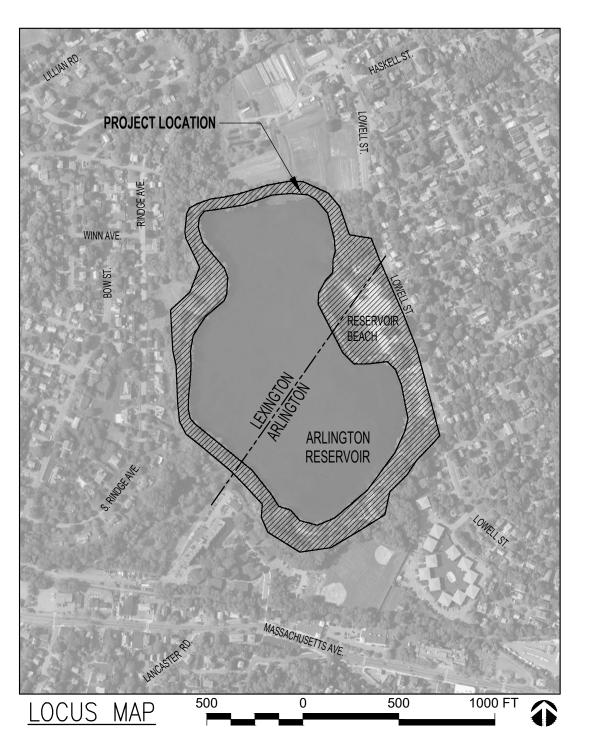
Scale: N/A

Drawing Title:

COVER SHEET

G





## **GENERAL NOTES:**

- CONTRACTOR SHALL BE FAMILIAR WITH DRAWINGS AND SPECIFICATIONS BEFORE BIDDING
   DRAWINGS SHALL SUPERSEDE SPECIFICATIONS FOR ANY
- 3. CONTRACTOR SHALL CONFORM TO ALL FEDERAL, STATE AND LOCAL CODES, INCLUDING CMR521/ADA.
- 4. NO SMOKING IS ALLOWED WITHIN THE PARK AT ANY TIME 5. SURVEY WAS PERFORMED BY WESTON & SAMPSON ENGINEERS, INC. OF ALBANY, NY WAS UNDERTAKEN IN
- DECEMBER 2017 6. PER THE STORMWATER POLLUTION PREVENTION PLAN (DATED 11/9/2020), THE CONTRACTOR CAN NOT DISTURB MORE THAN 5 ACRES AT ANY GIVEN TIME.

# <u>LEGEND</u>

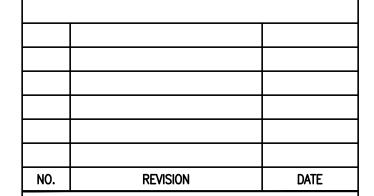
----- APPROXIMATE TOP OF BANK

----- 200' RIVERFRONT AREA

# ARLINGTON RESERVOIR -PHASE 2

ARLINGTON, MASSACHUSETTS

TOWN OF ARLINGTON



Kyle Zick Landscape Architecture, Inc. 36 Bromfield Street Suite 202 617 451-1018 Tel Boston, MA 02108 www.kylezick.com



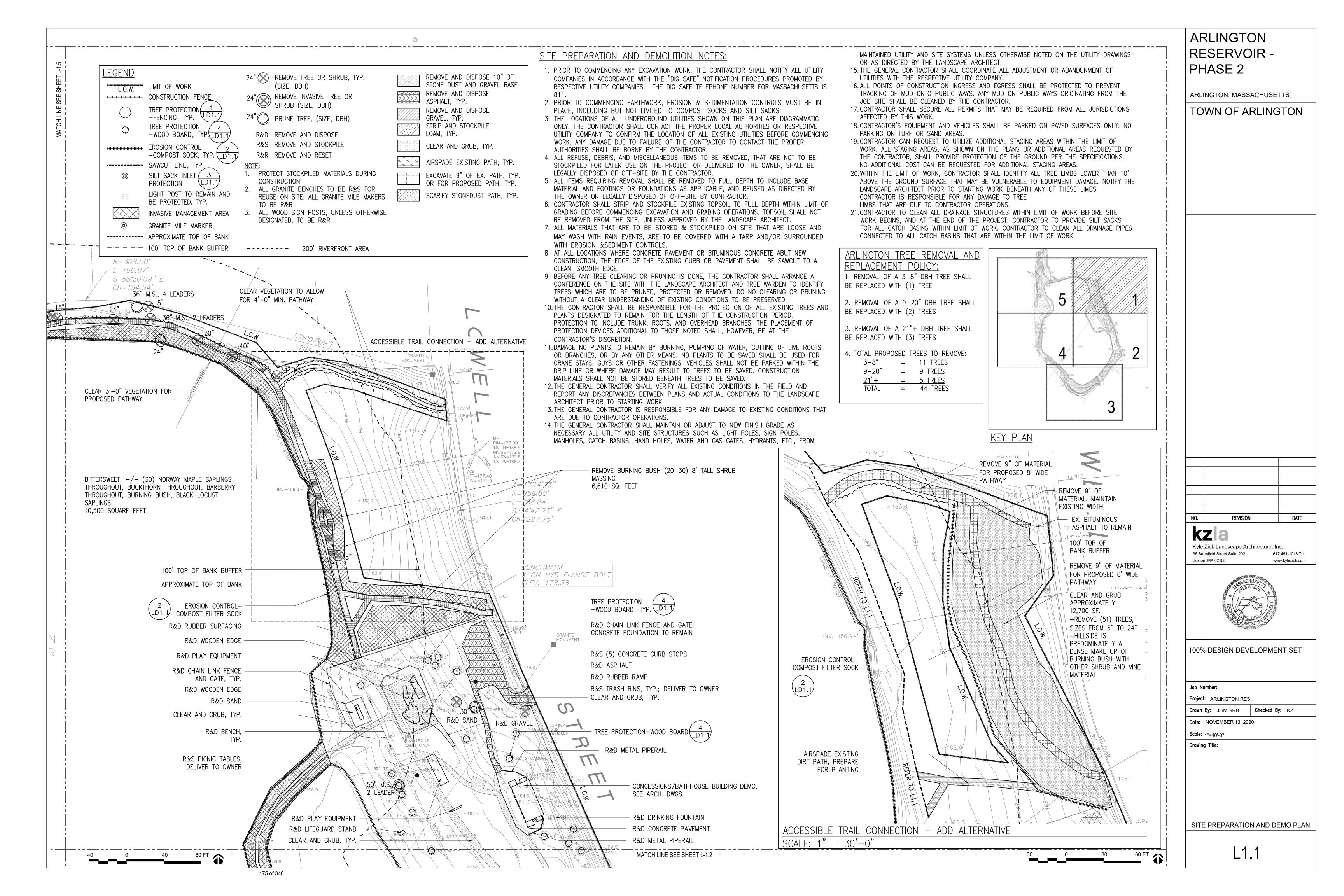
100% DESIGN DEVELOPMENT SET

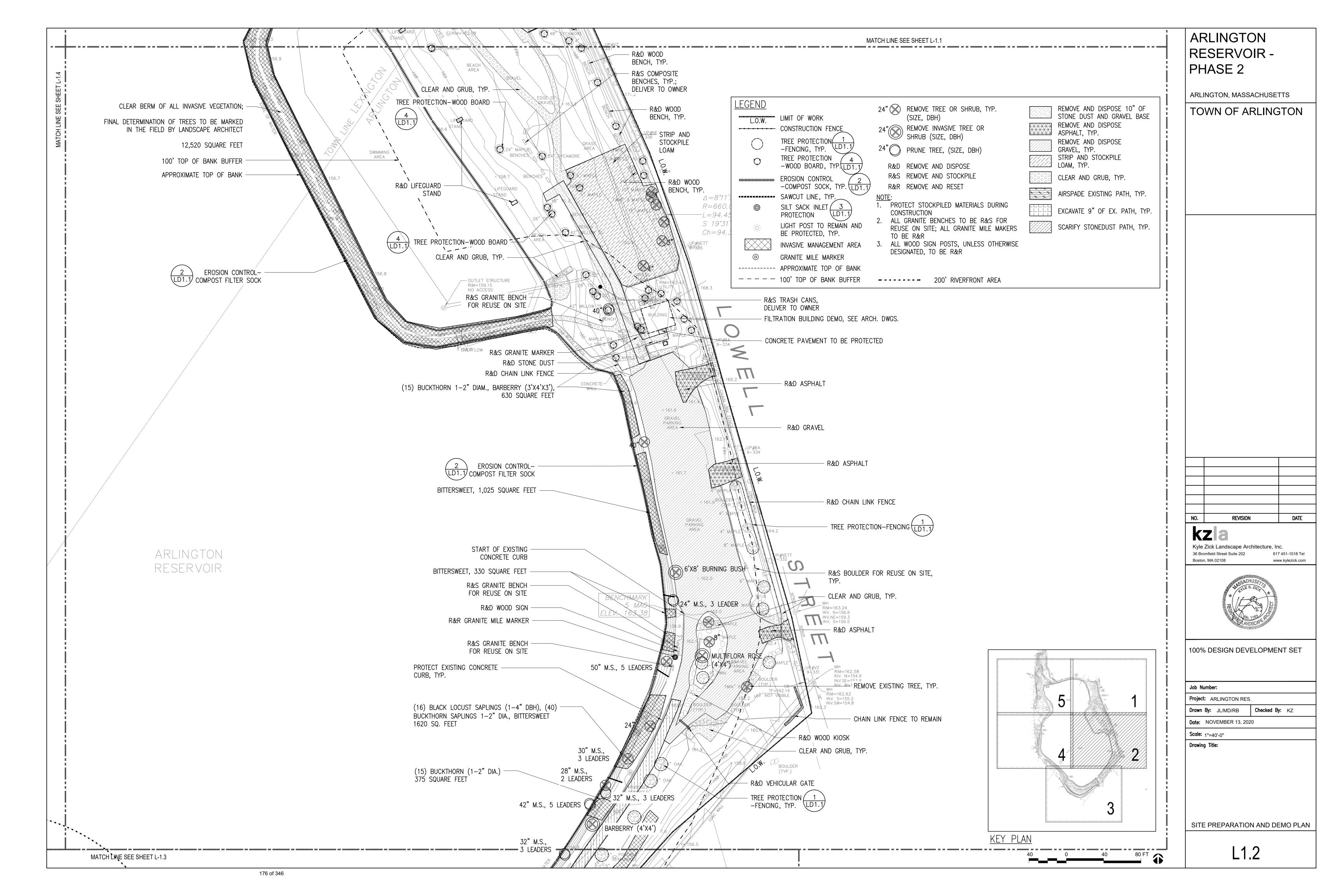
Date: NOVEMBER 13, 2020  Scale: AS SHOWN	Project: ARLINGTON RES.  Drawn By: JL/MD/RB Checked By: KZ  Date: NOVEMBER 13, 2020
DrawnBy:JL/MD/RBCheckedBy:KZDate:NOVEMBER 13, 2020Scale:AS SHOWN	DrawnBy:JL/MD/RBCheckedBy:KZDate:NOVEMBER 13, 2020Scale:AS SHOWN
Date: NOVEMBER 13, 2020  Scale: AS SHOWN	Date: NOVEMBER 13, 2020  Scale: AS SHOWN
Scale: AS SHOWN	Scale: AS SHOWN
Drawing Title:	Drawing Title:
Drawing nac.	

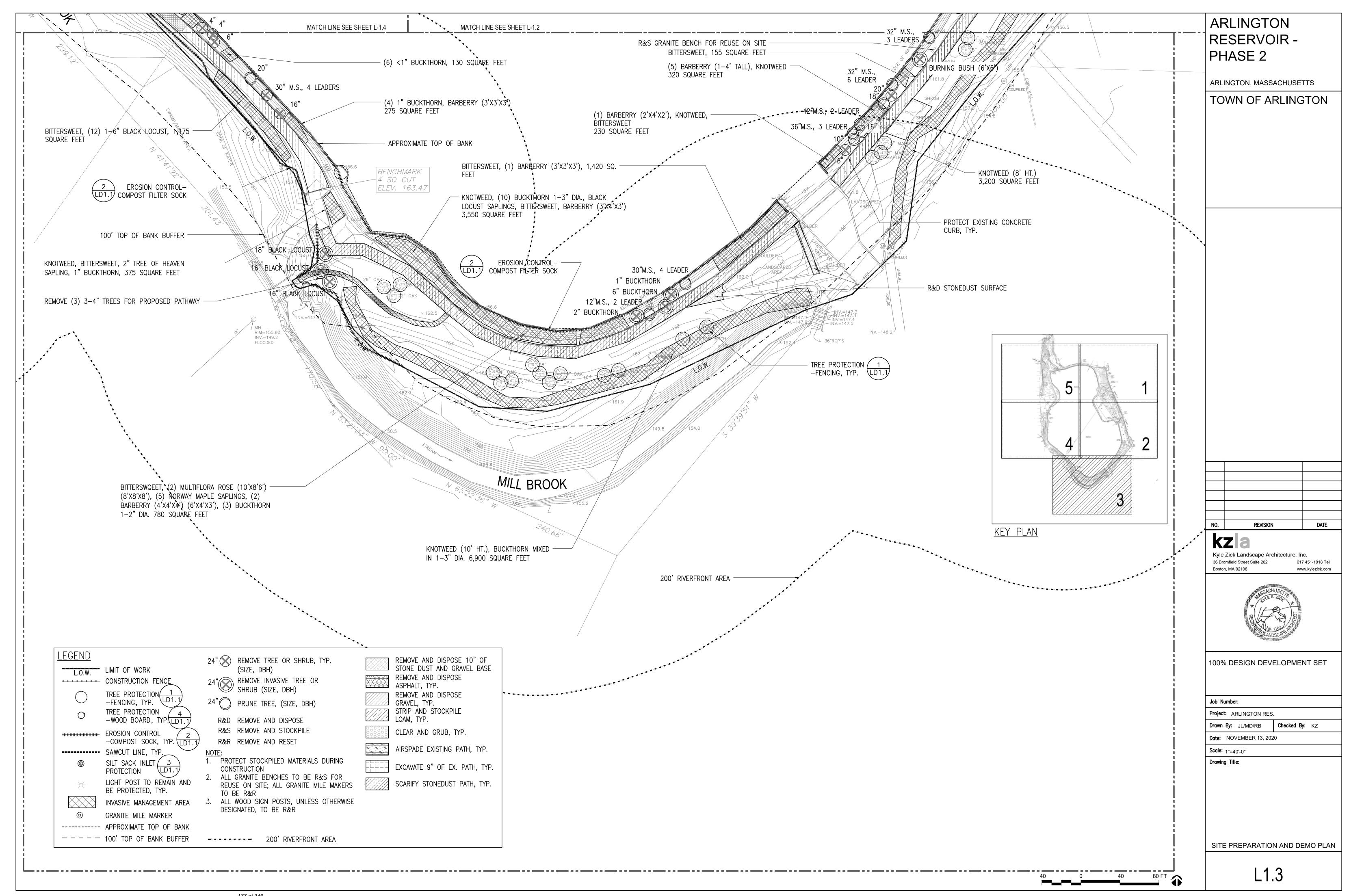
**KEY PLAN** 

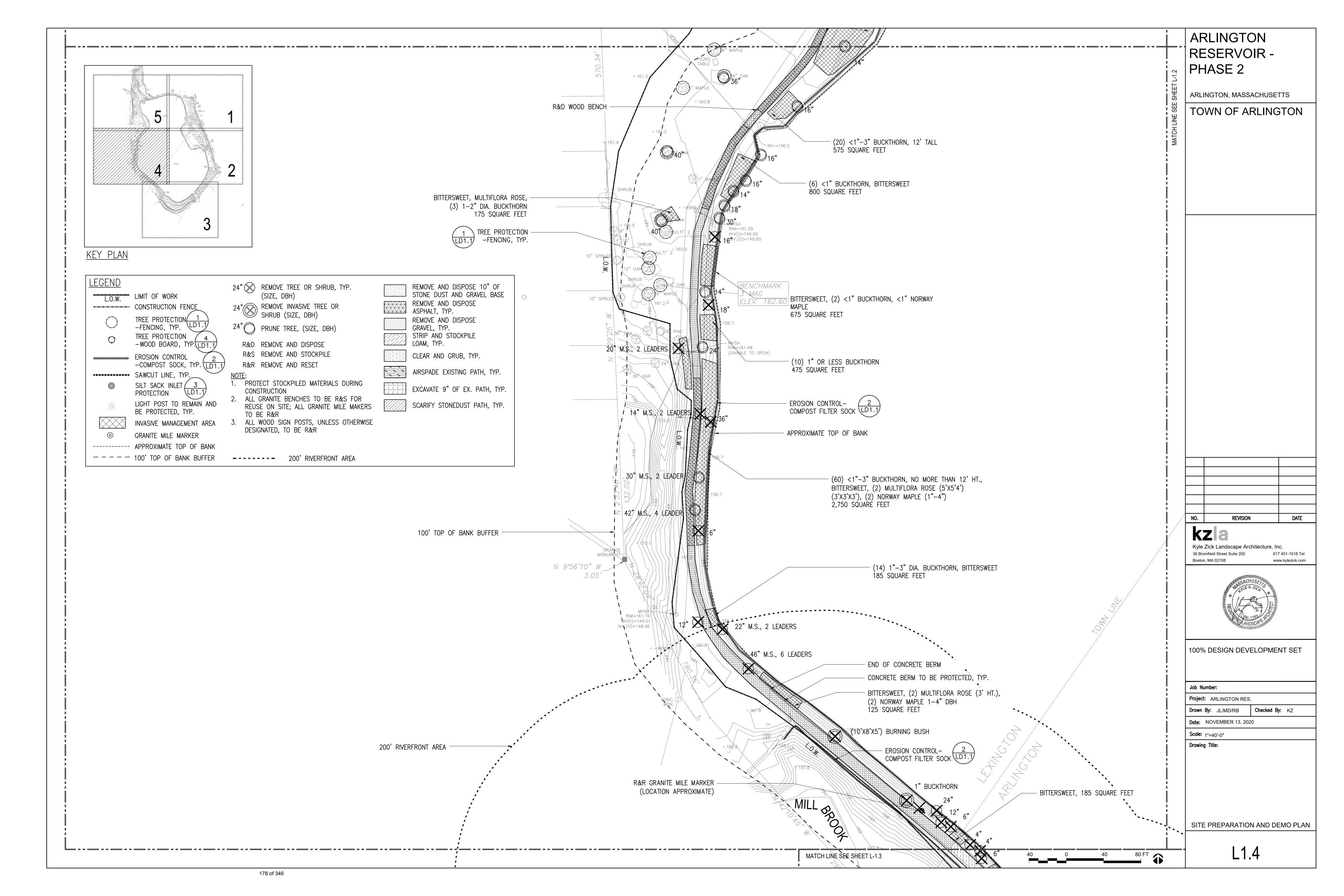
L0

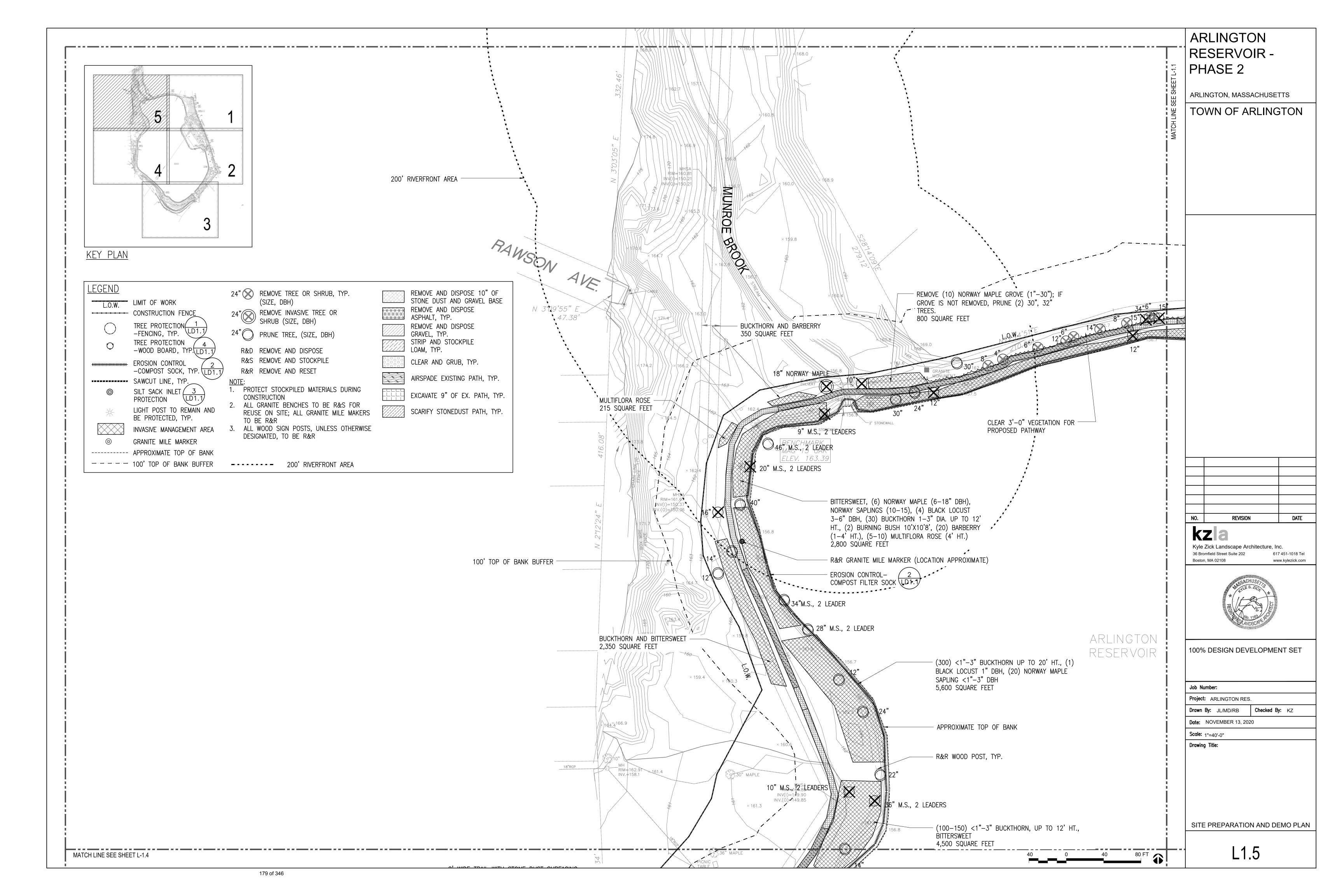
174 of 346

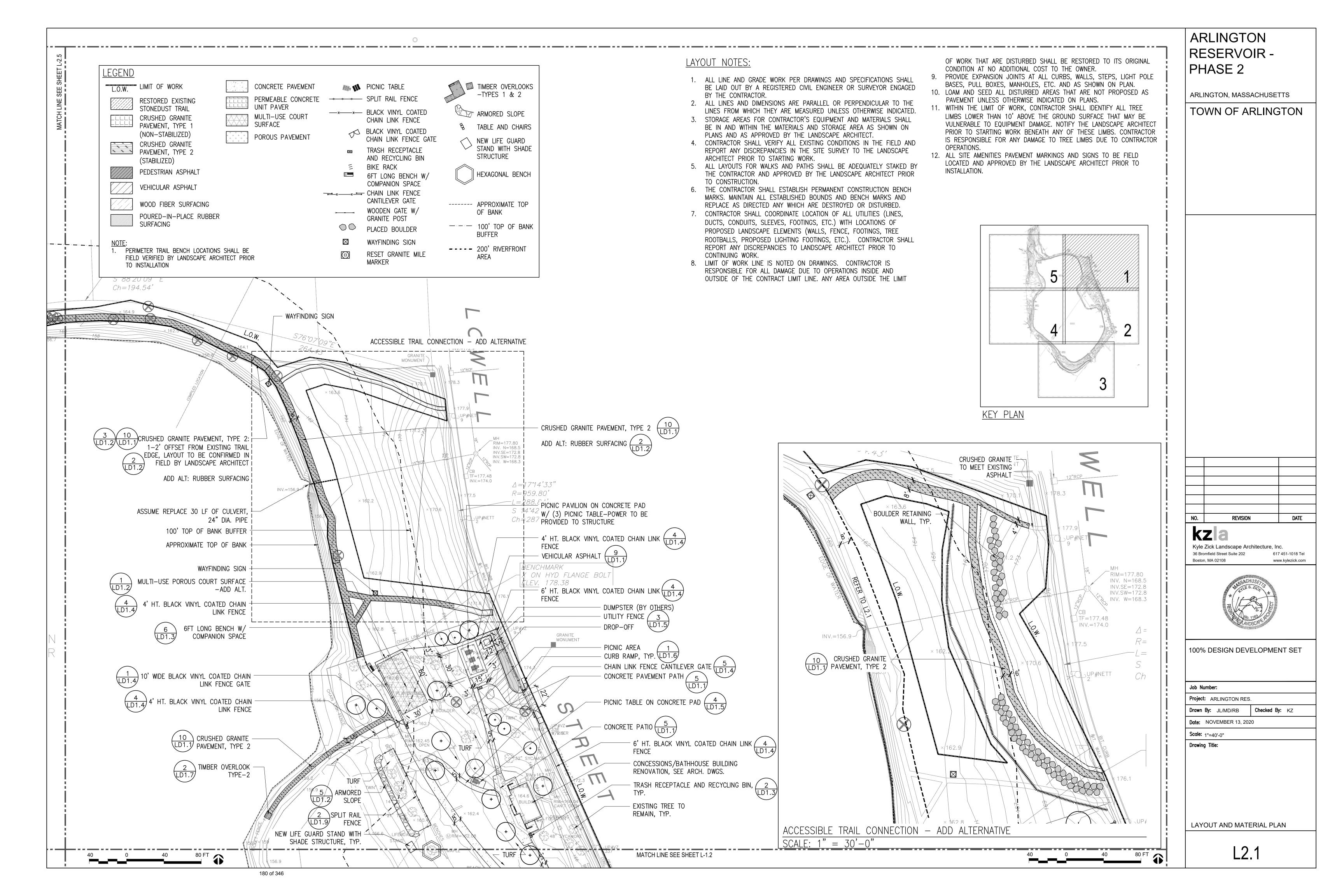


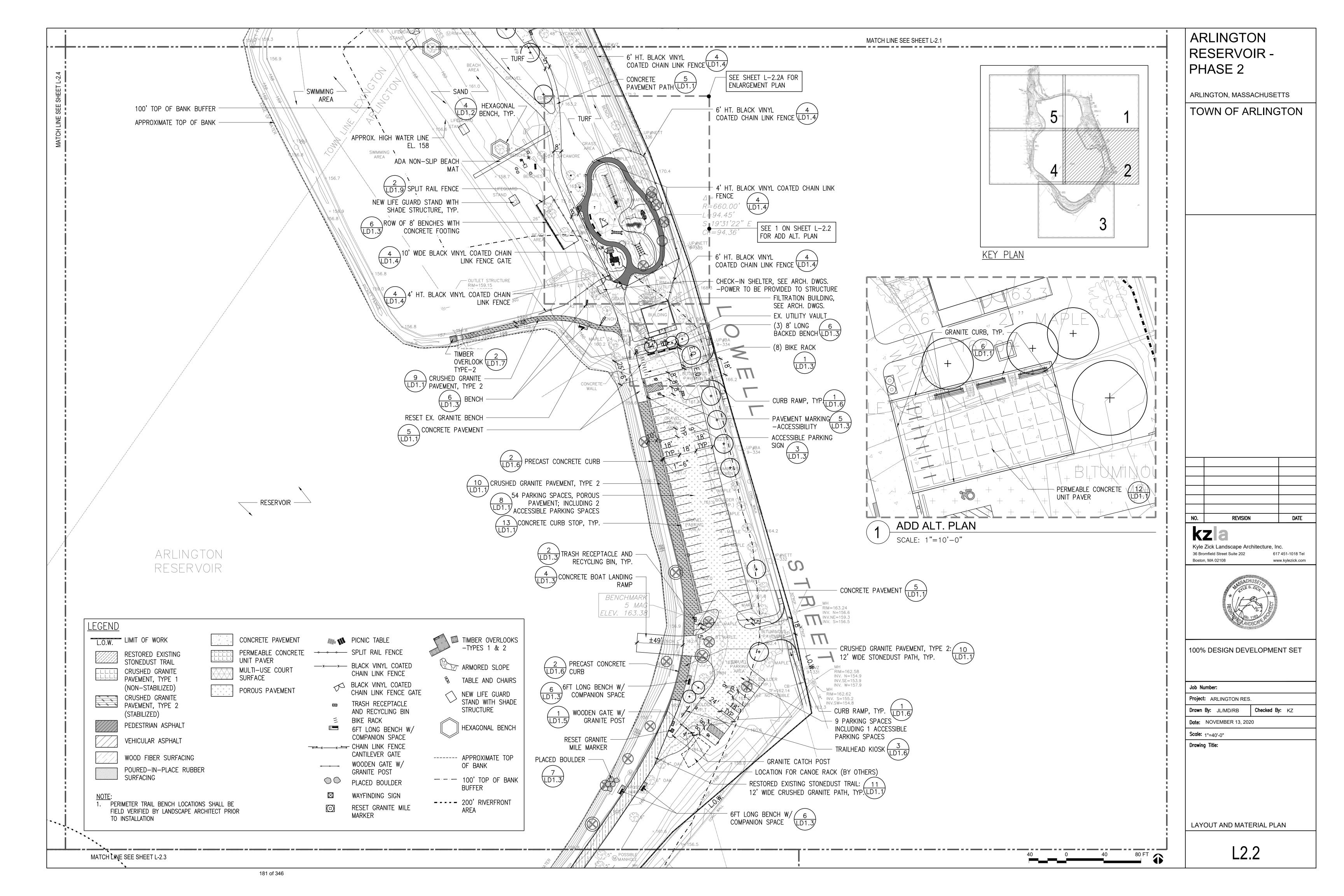


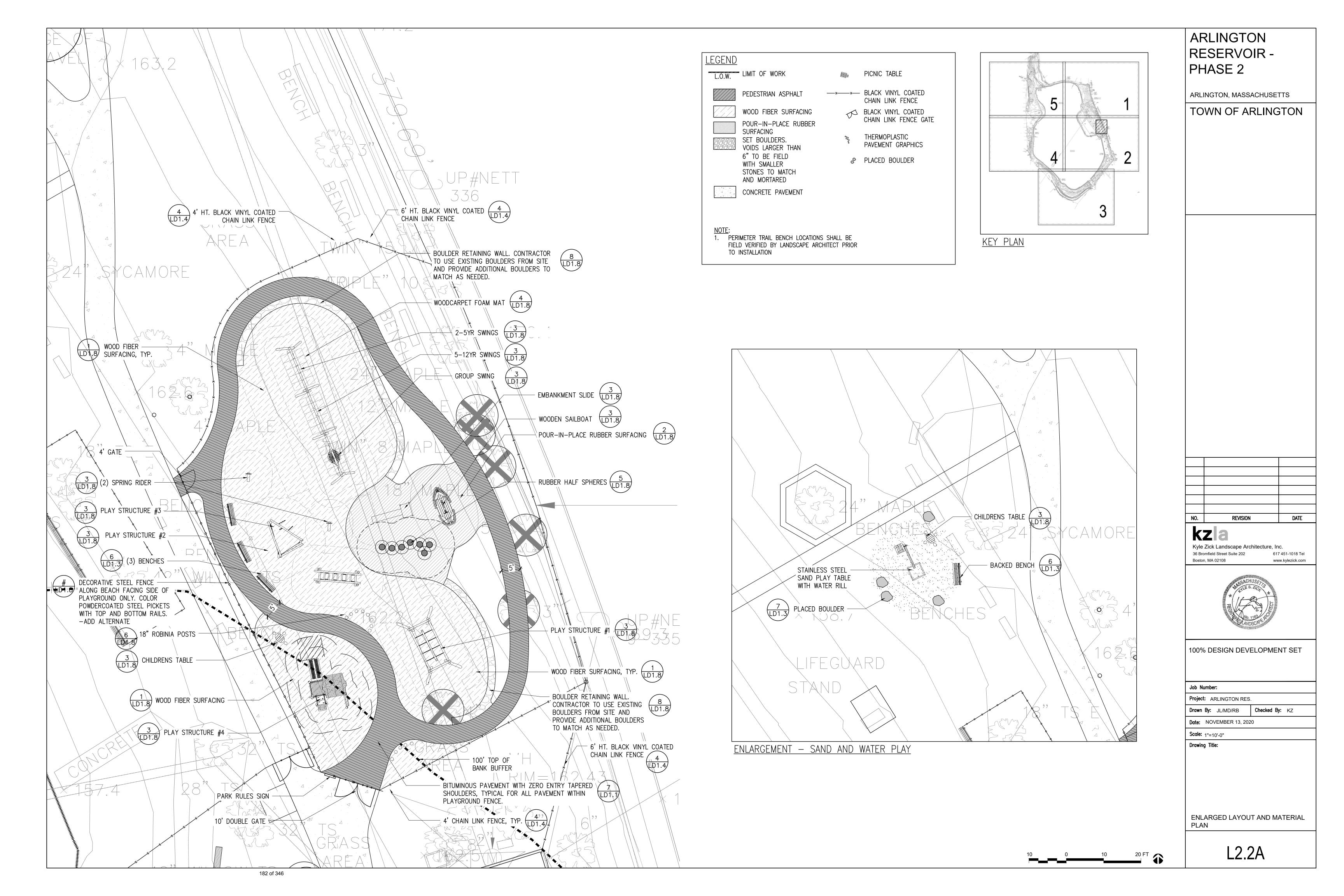


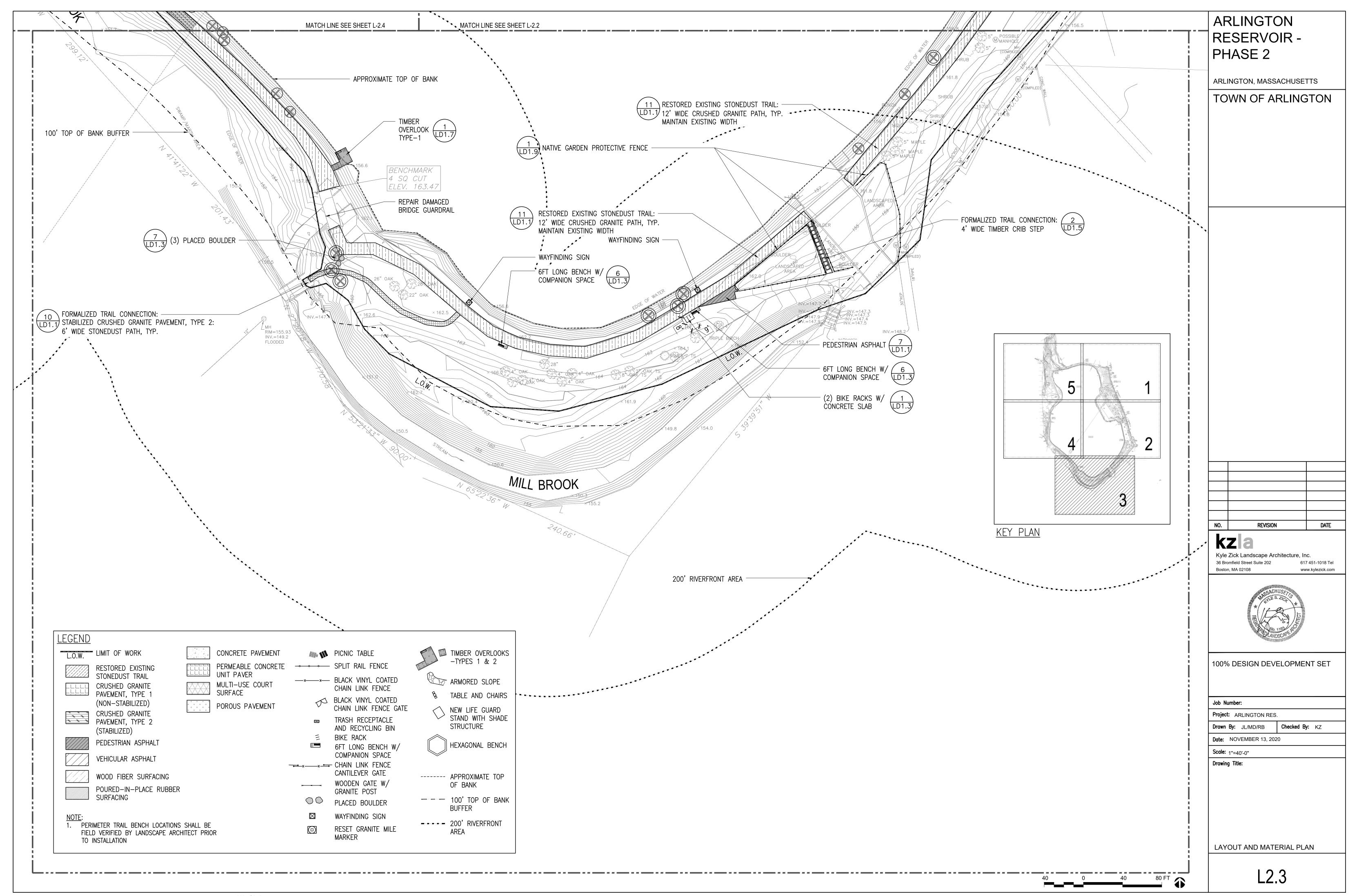


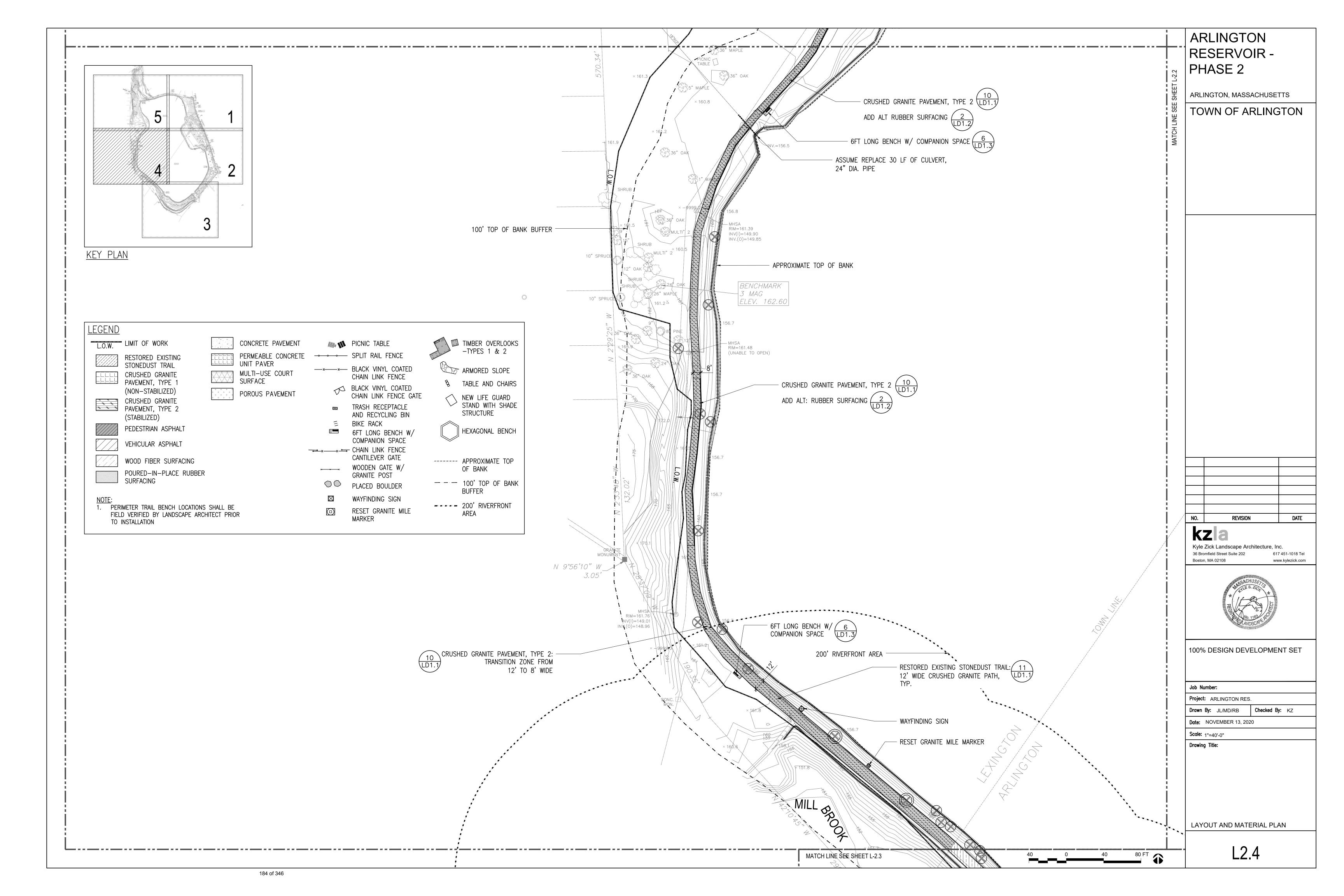


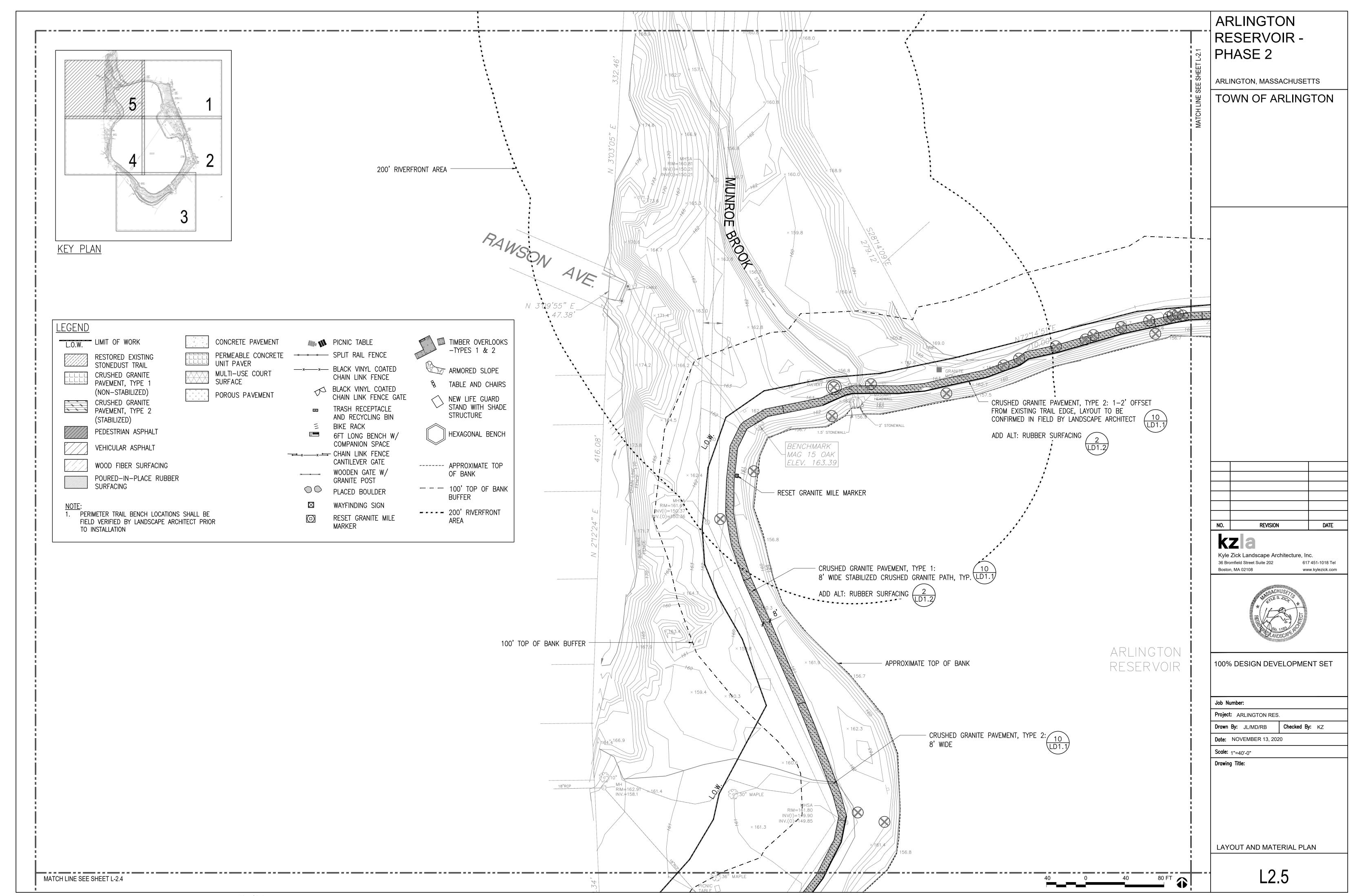


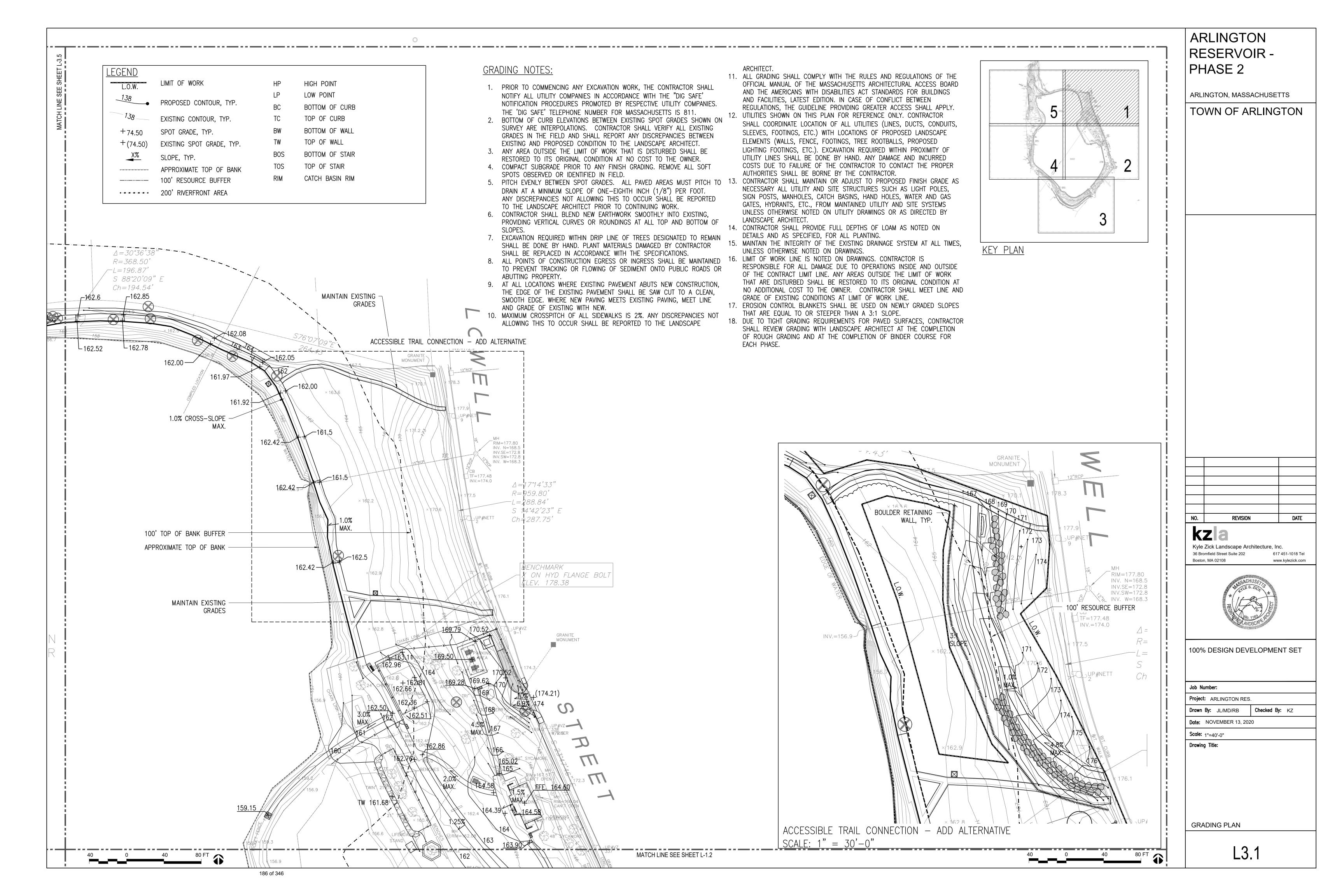


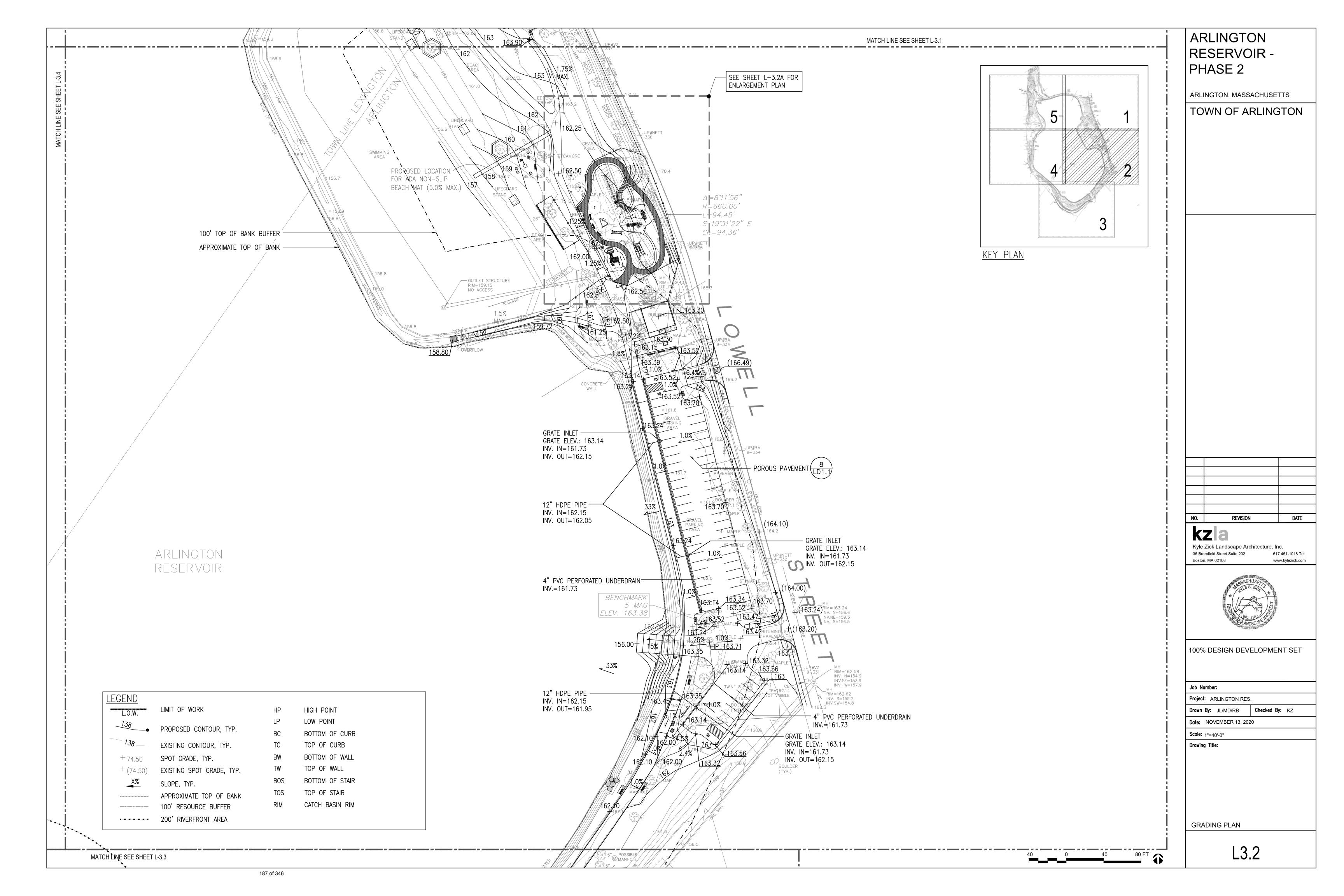


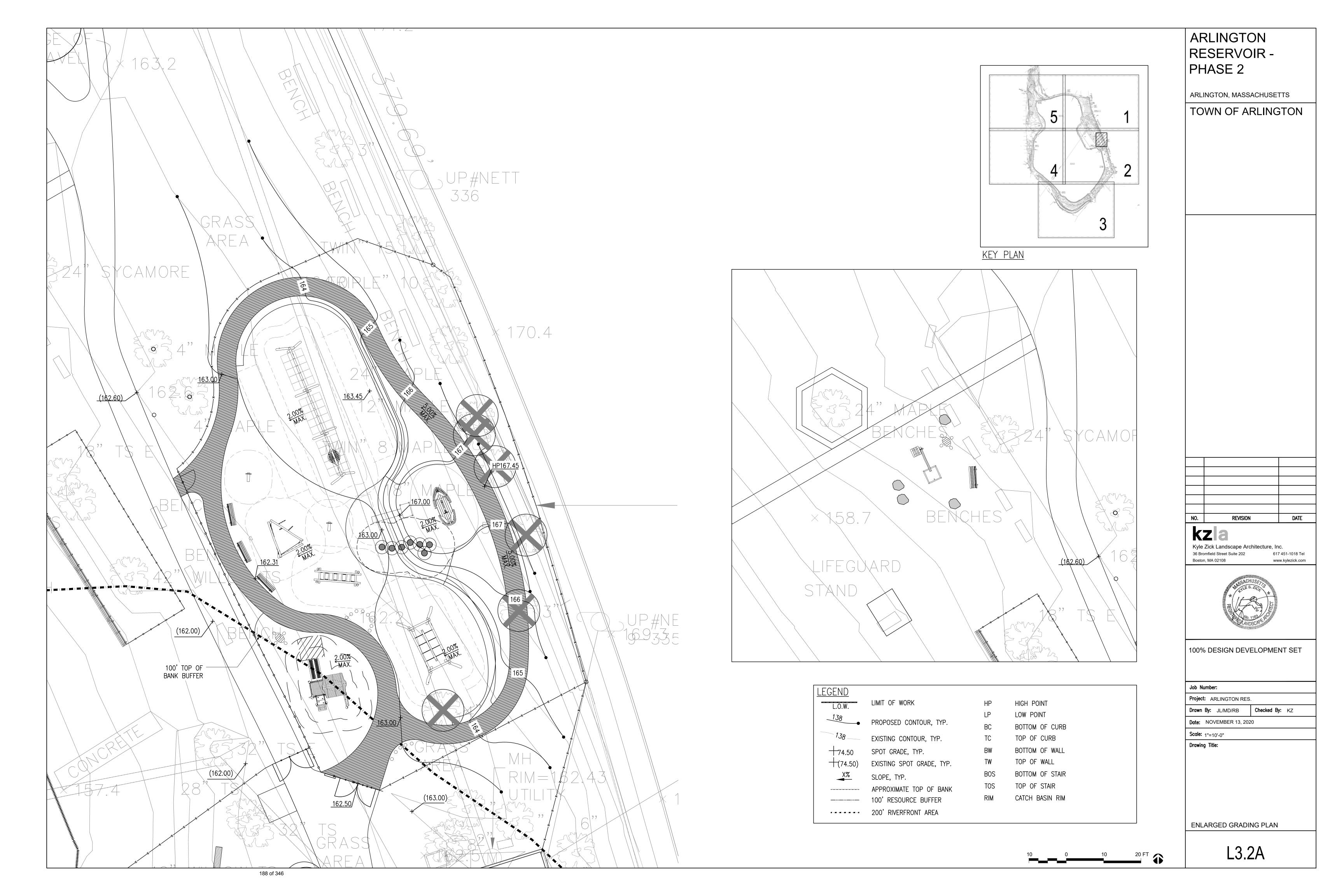


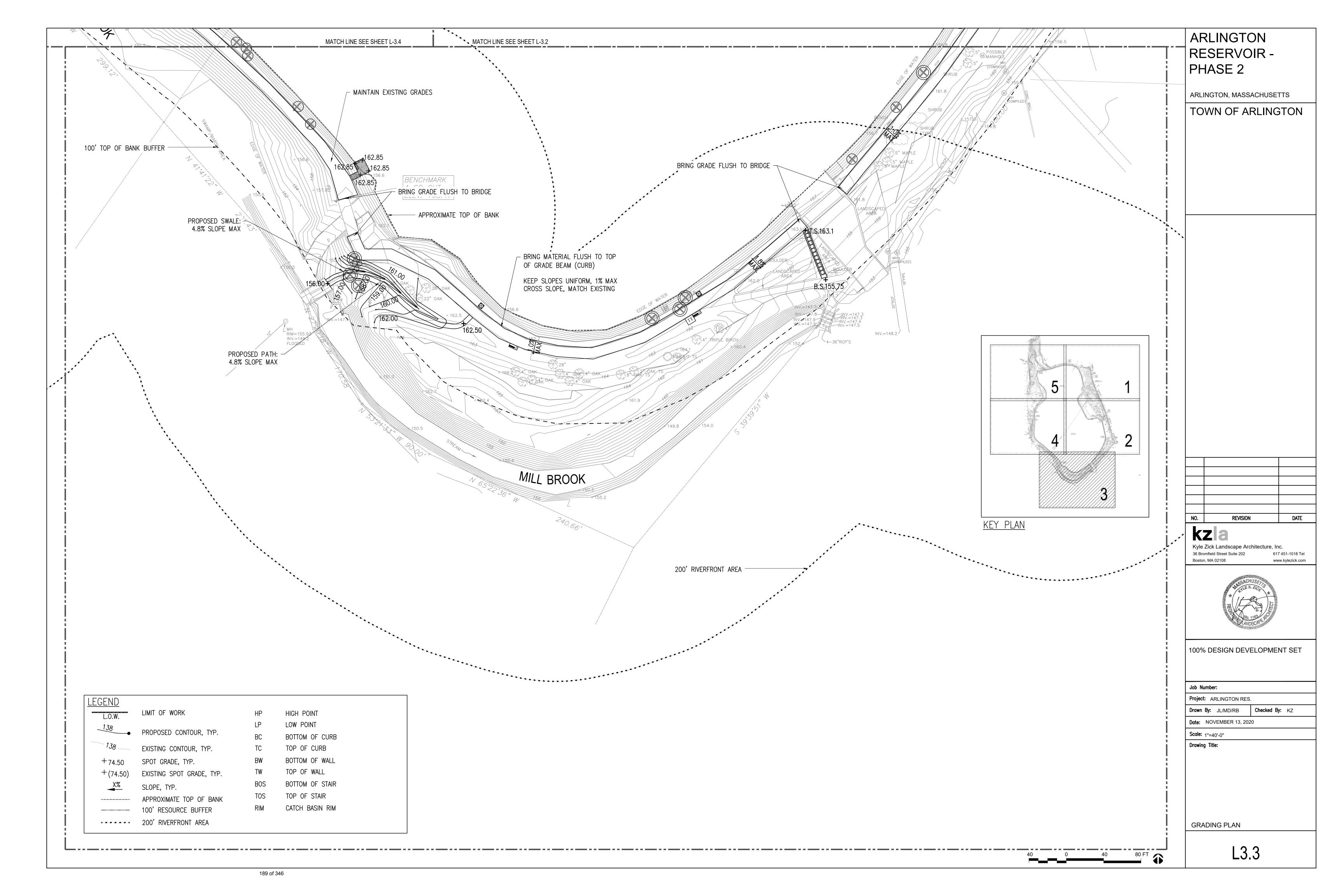


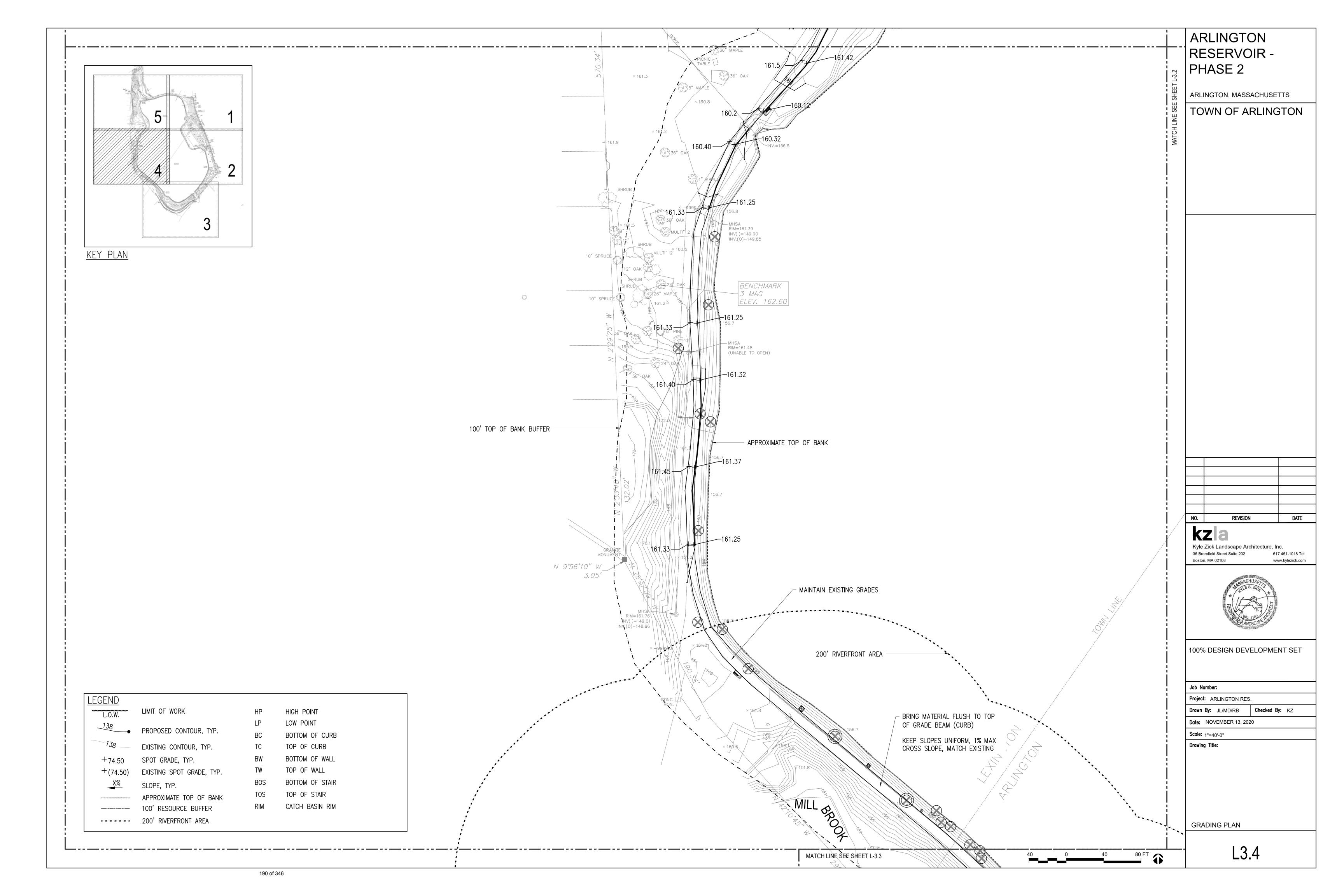


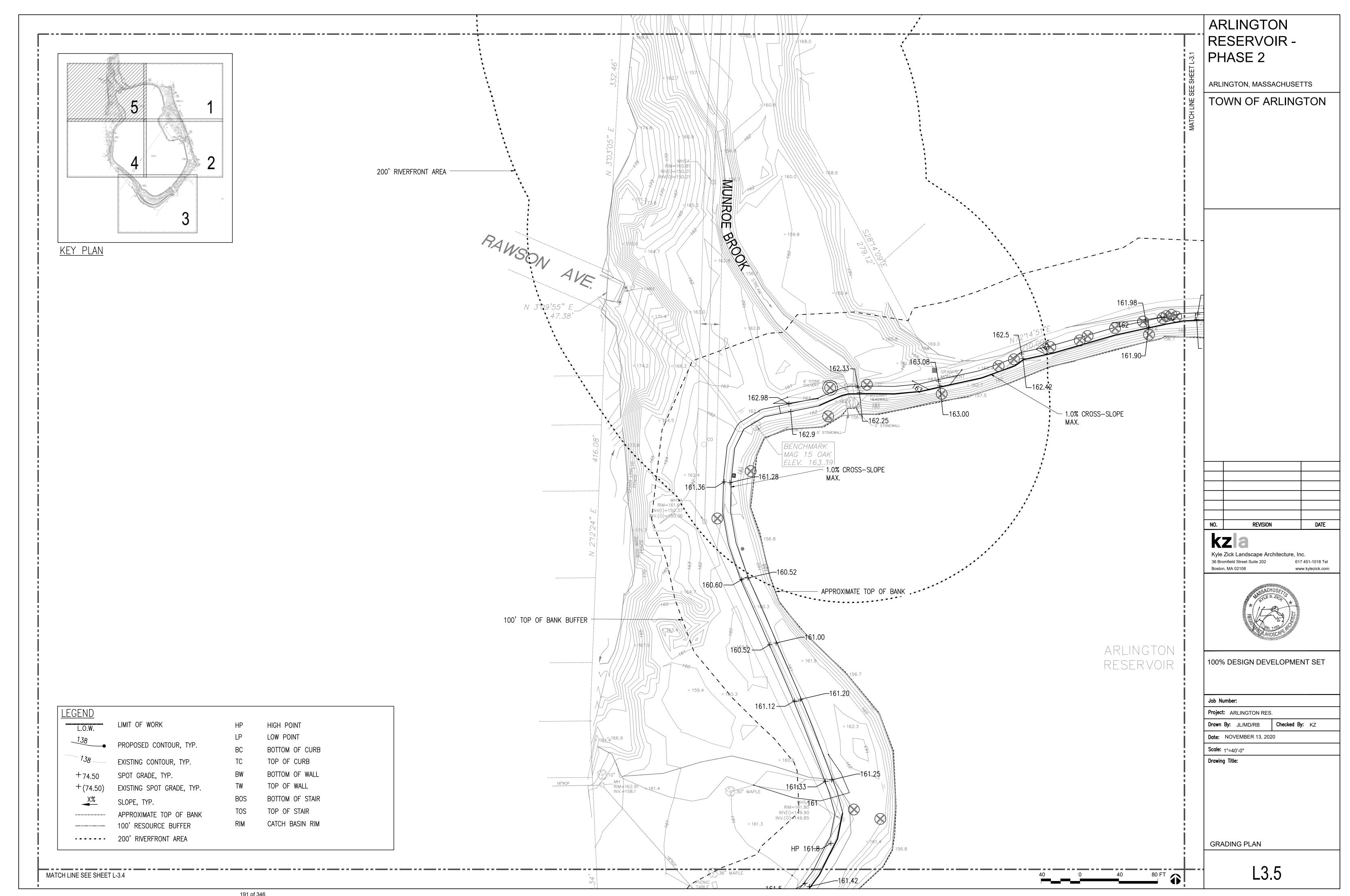


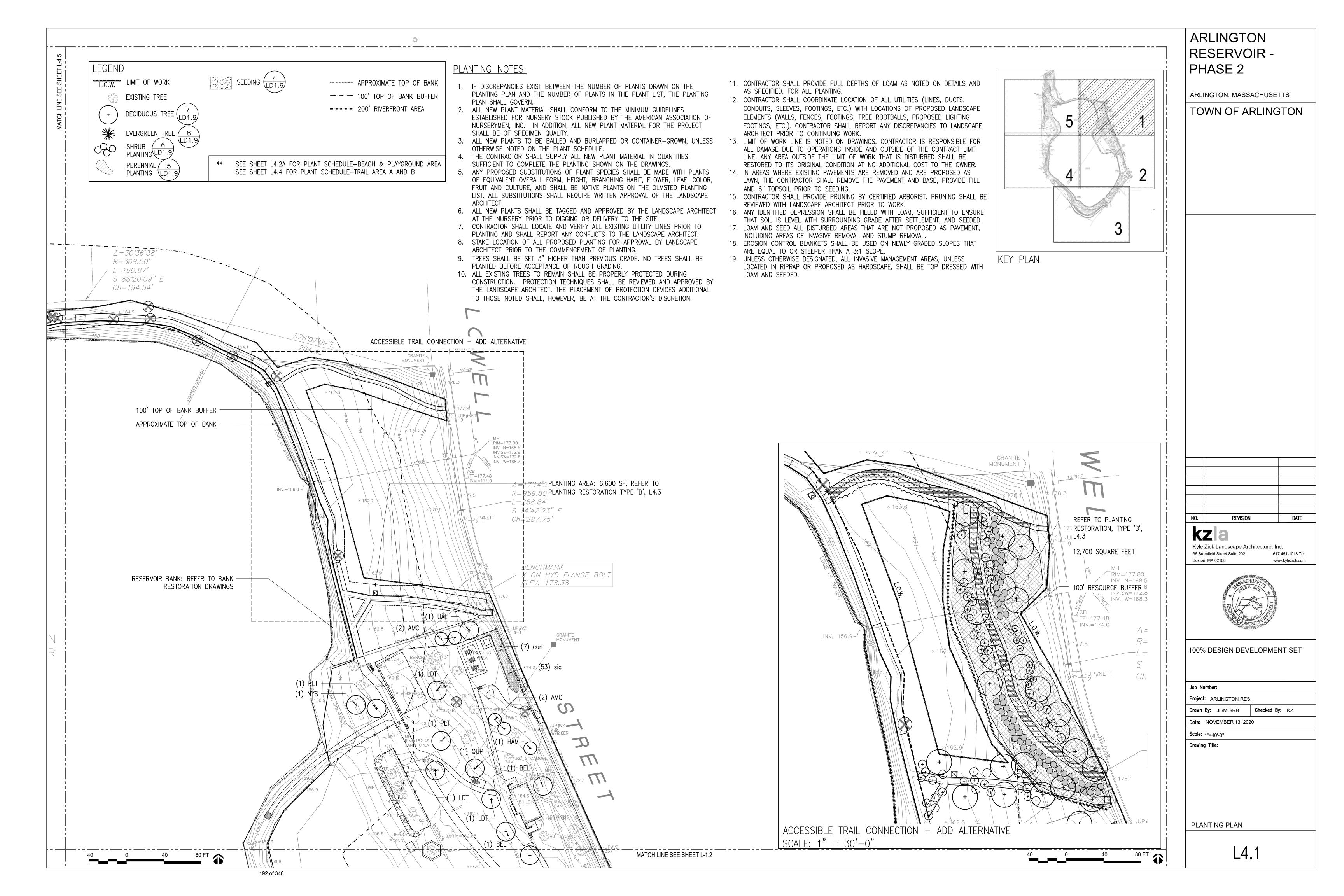


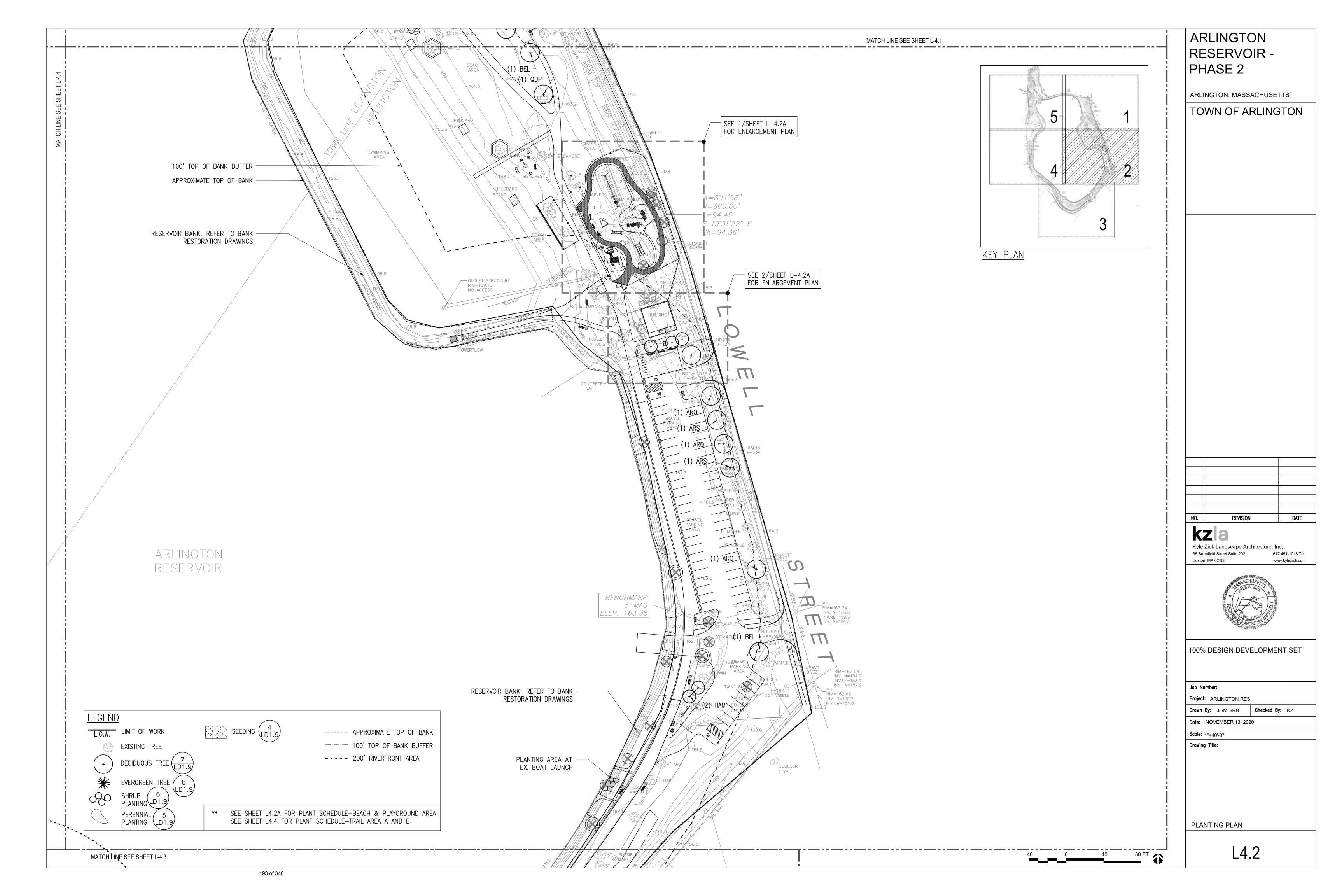


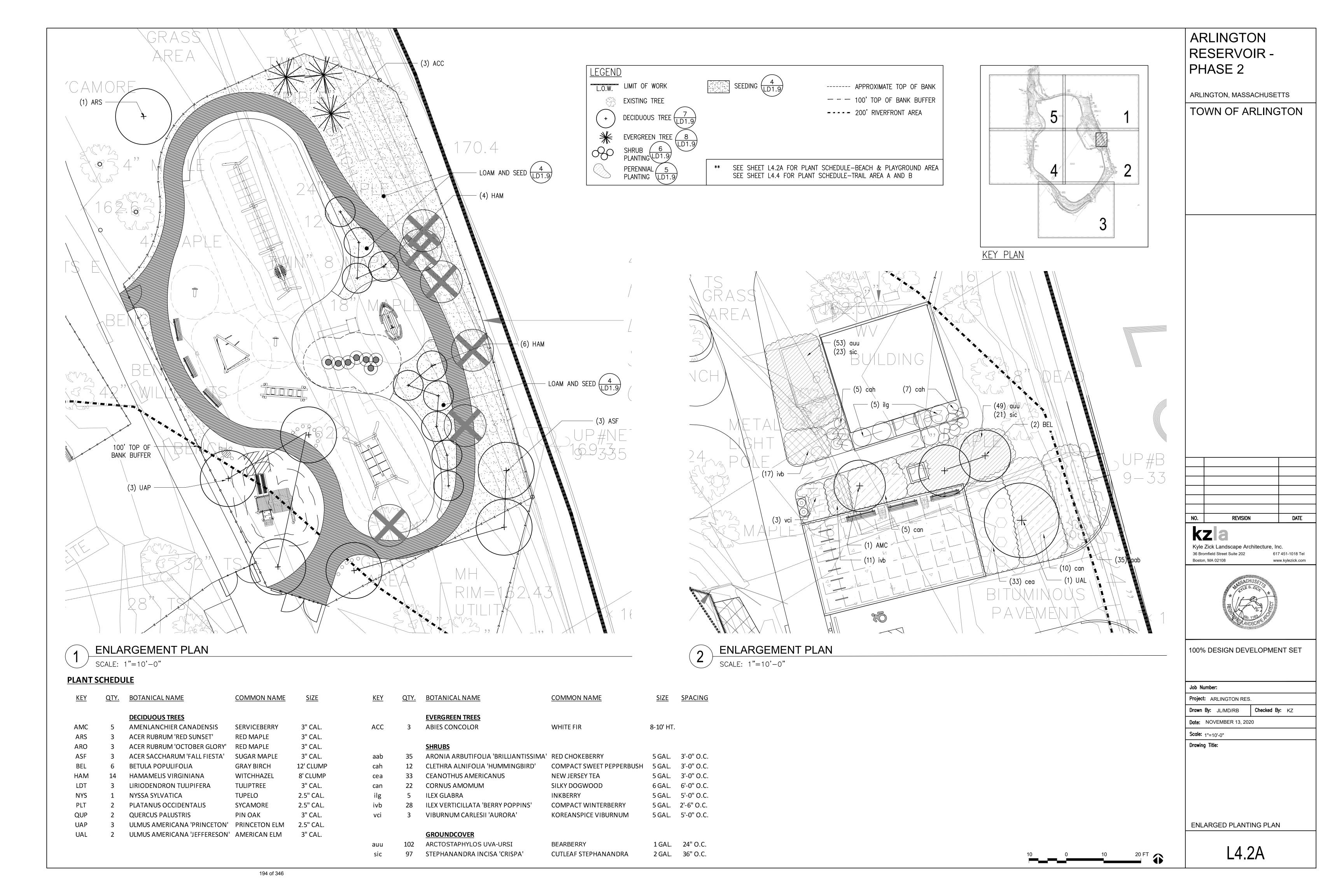


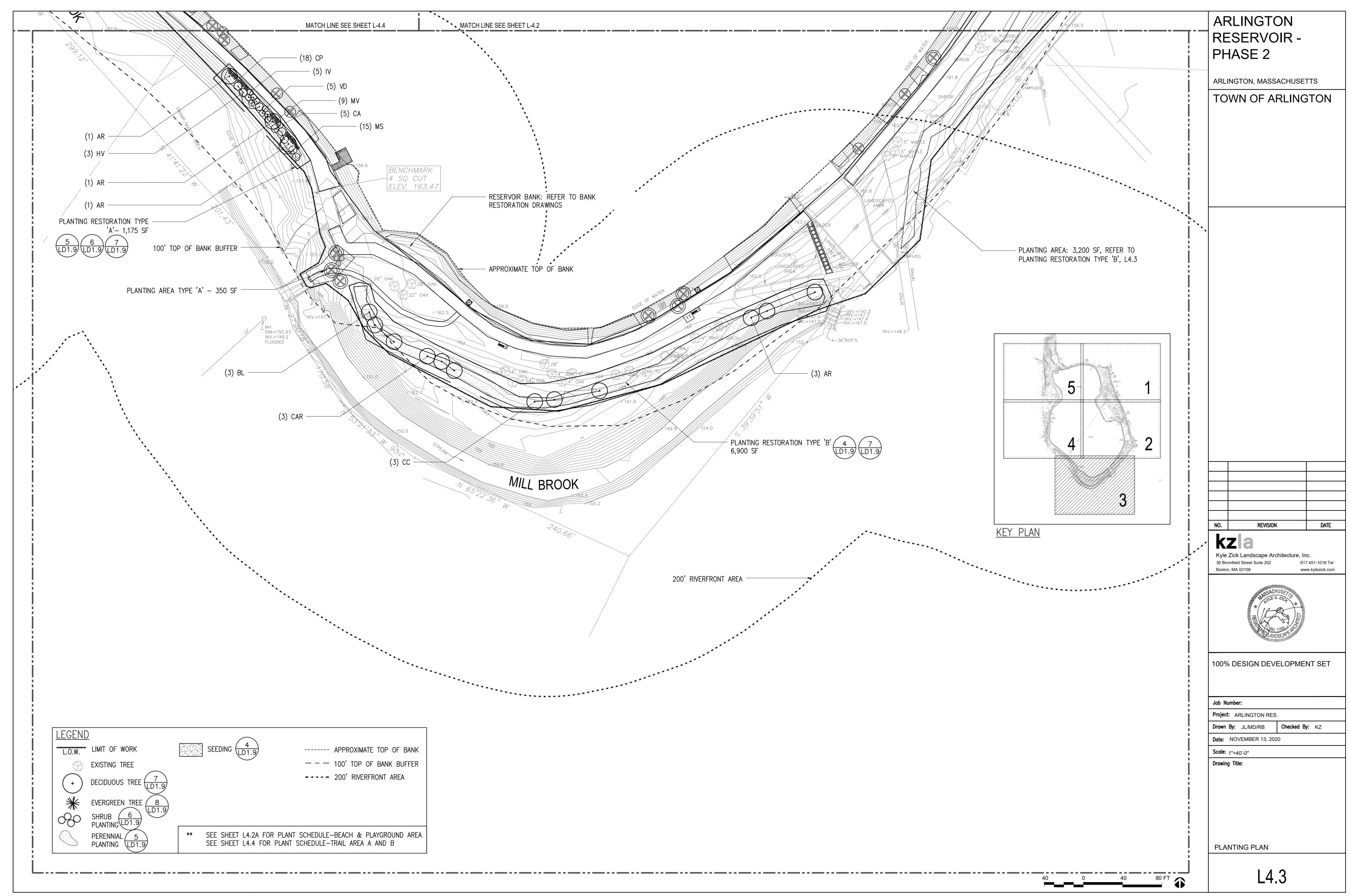


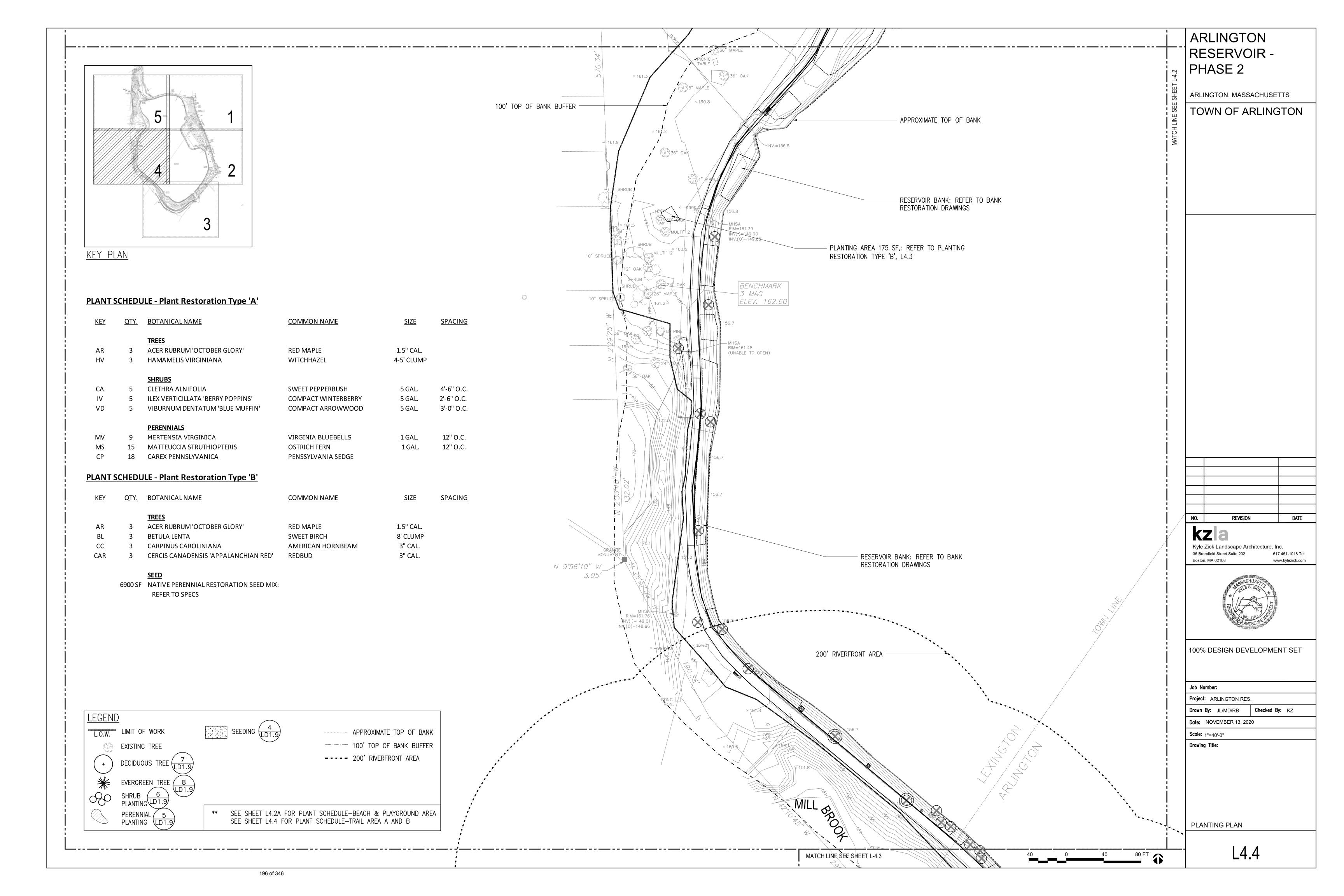


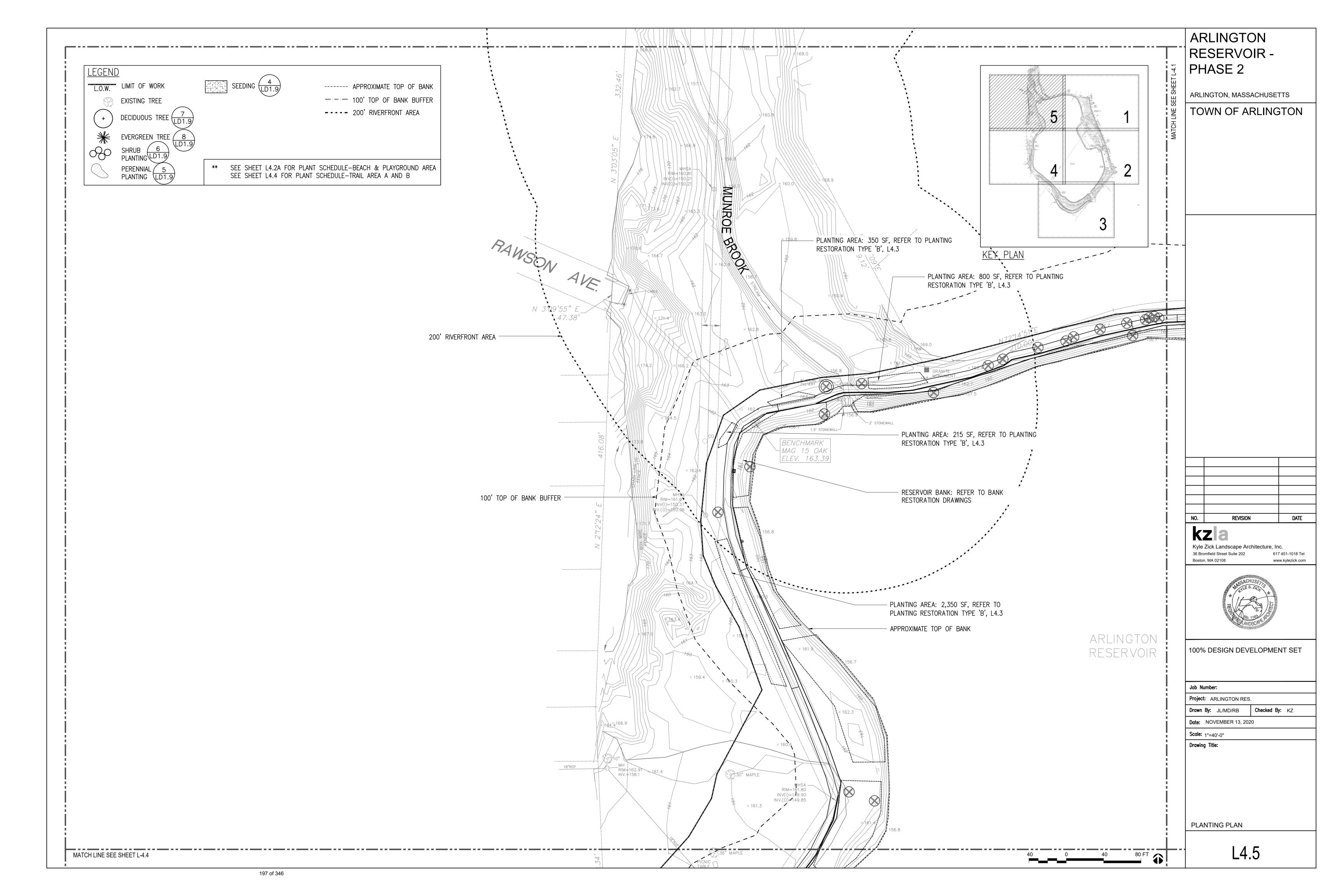


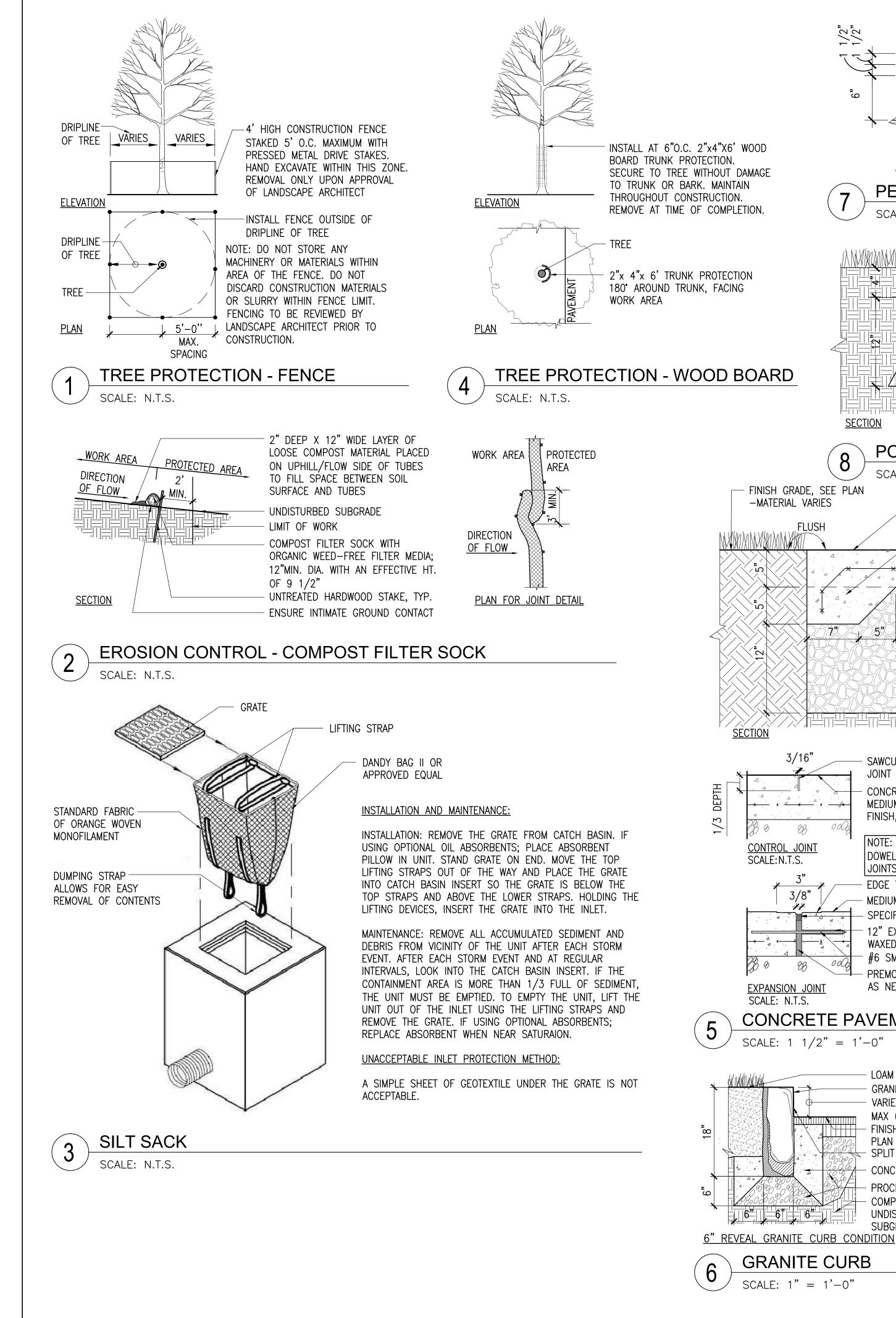


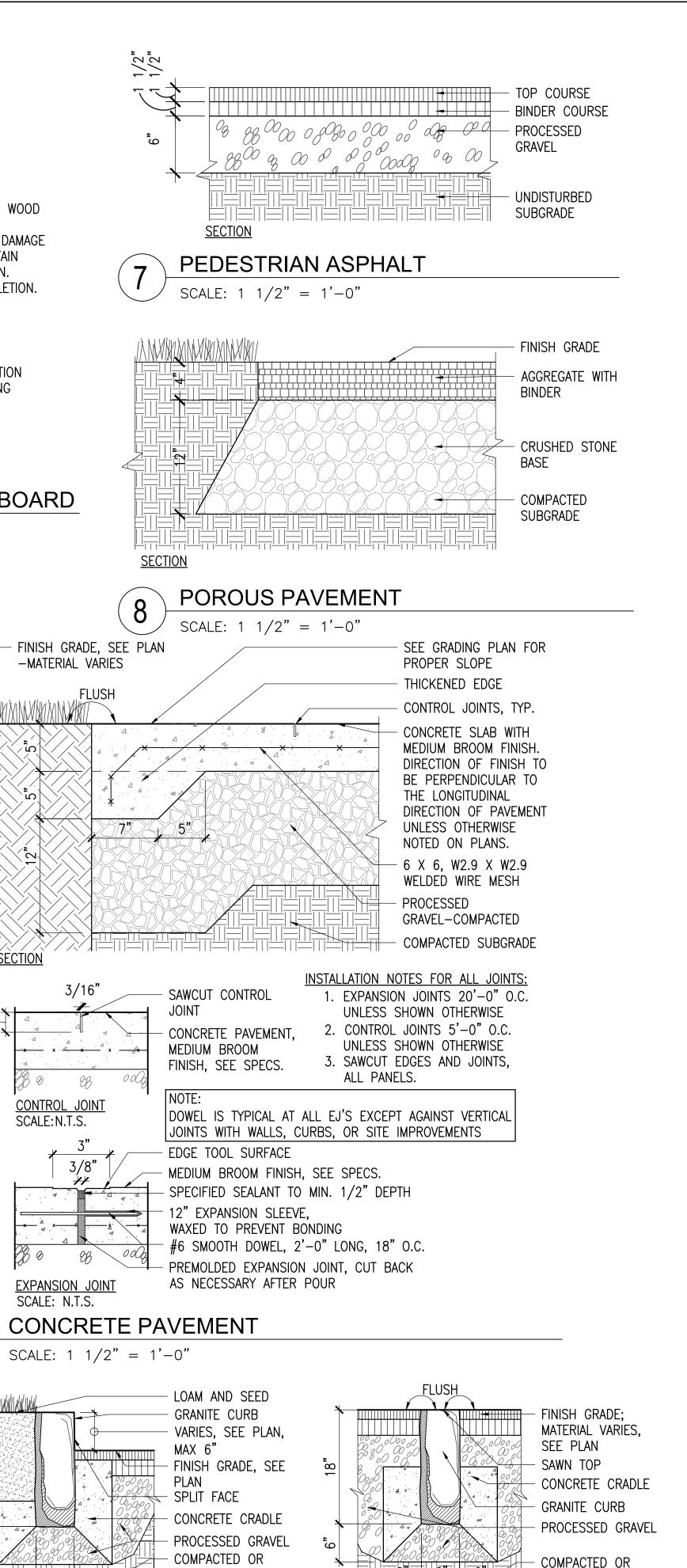












UNDISTURBED

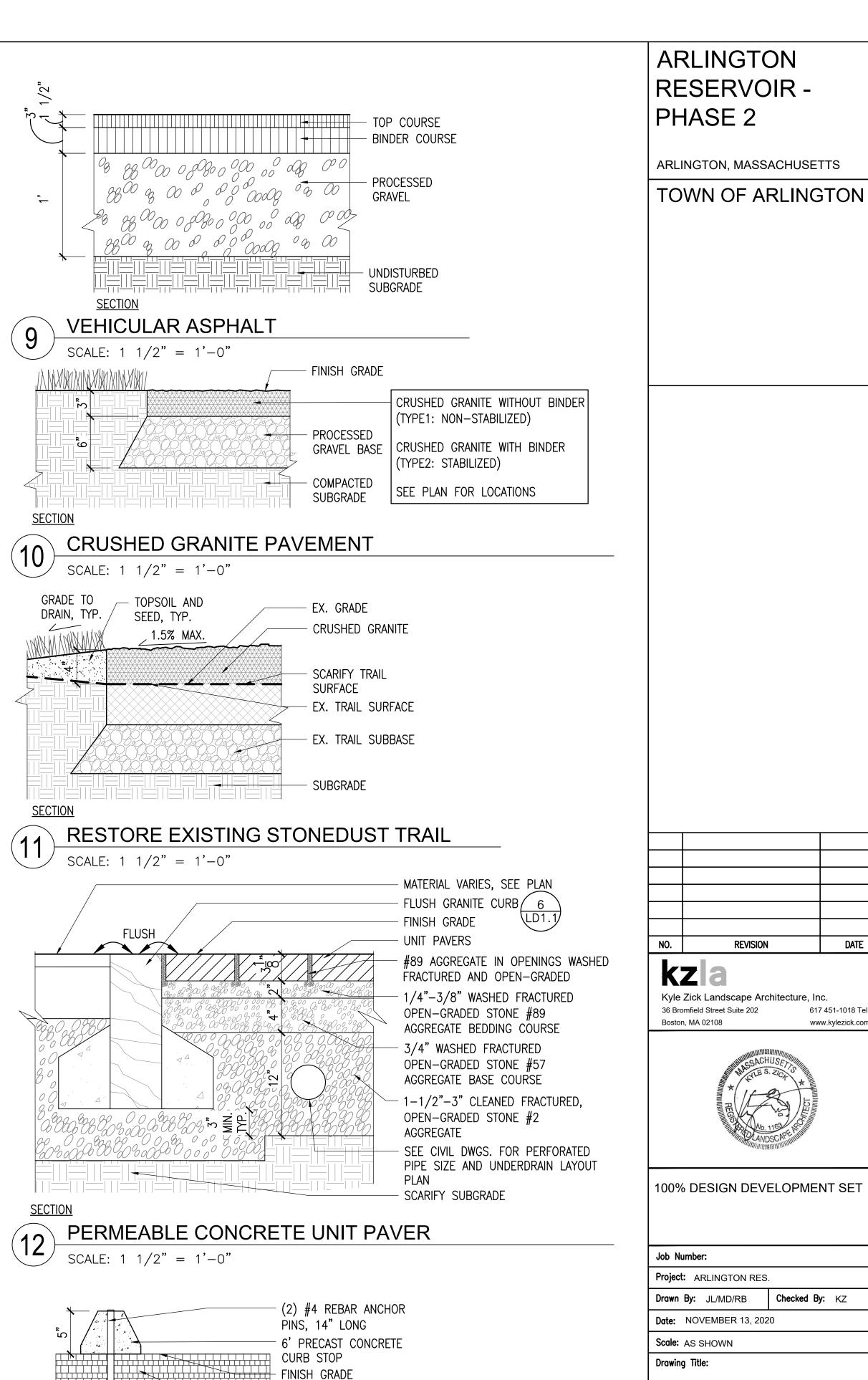
SUBGRADE

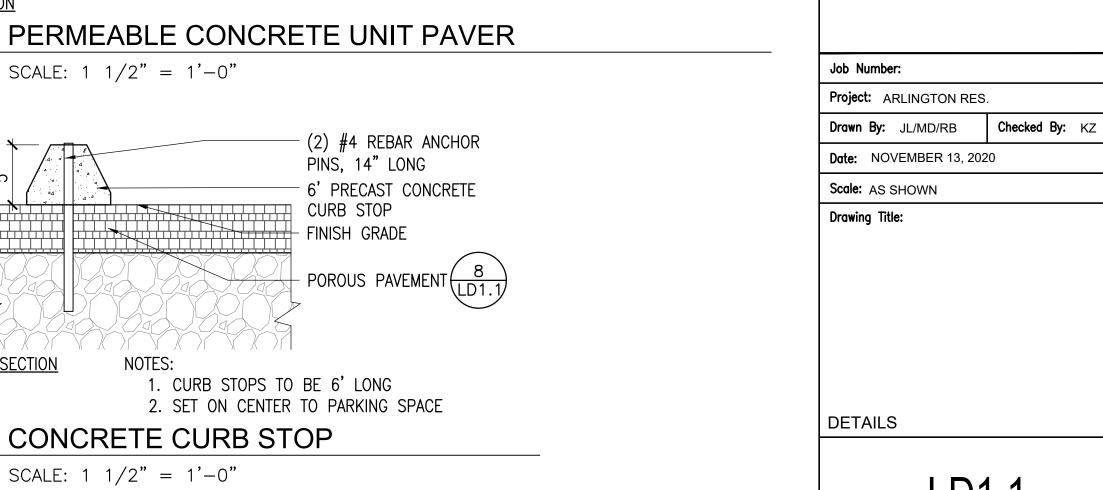
FLUSH GRANITE CURB CONDITION

SCALE: N.T.S.

UNDISTURBED

SUBGRADE





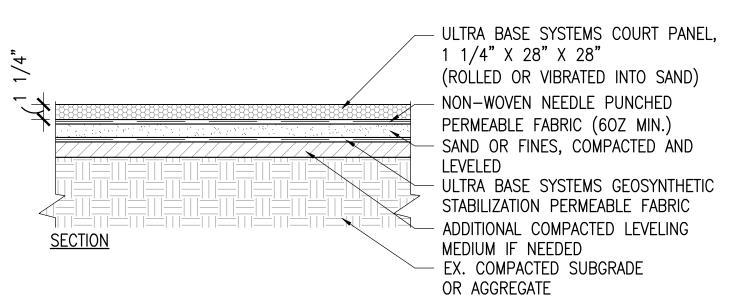
LD1.1

DATE

617 451-1018 Tel

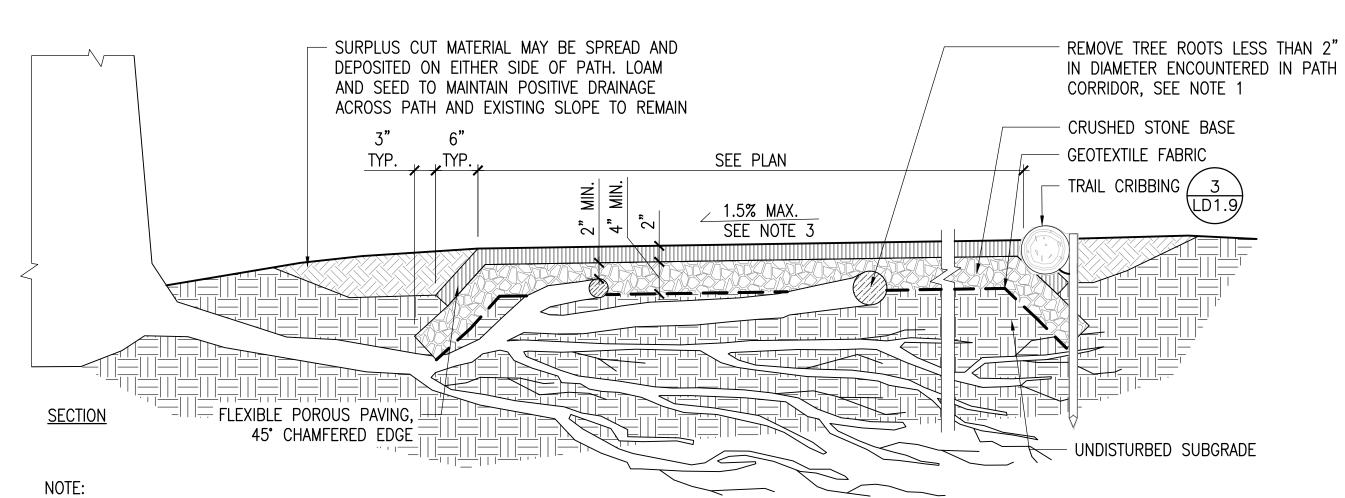
www.kylezick.com

REVISION



# PERMEABLE ATHLETIC COURT SURFACING

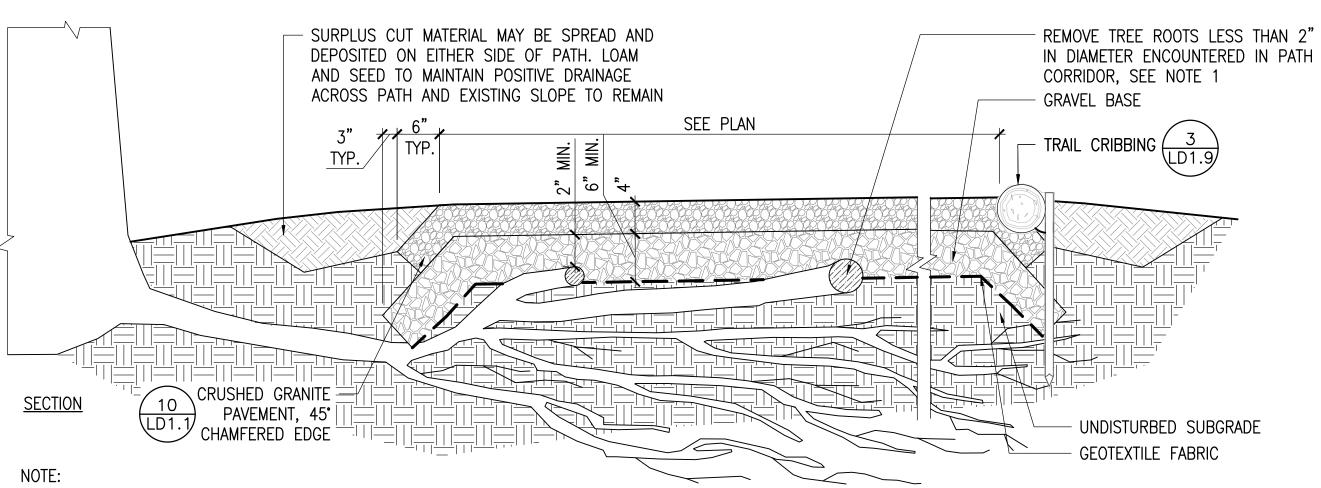
SCALE:  $1 \frac{1}{2} = 1'-0''$ 



- 1. TO PREVENT INJURY TO CRITICAL ROOT ZONES OF ADJACENT TREES, SOIL IS TO BE EXCAVATED NON-INVASIVELY A MINIMUM OF 6 INCHES USING SUPERSONIC AIR KNIFE. FABRIC AND STONE ARE TO BE INSTALLED OVER AND AROUND ROOTS. SUBGRADE SHALL BE COMPACTED TO THE GREATEST EXTENT POSSIBLE. ROOT PRUNING MAY BE PERFORMED BY ARBORIST AS NEEDED ON SELECTED ROOTS LESS THAN 2 INCHES IN DIAMETER PROVIDED NO MORE THAN 15% OF THE CRITICAL ROOT ZONE IS REMOVED.
- 2. WHEREVER POSSIBLE, AND WITHOUT INJURING CRITICAL ROOT ZONES OF ADJACENT TREES. CRUSHED STONE BASE SHALL RUN 6 INCHES BEYOND THE END OF THE FLEXIBLE POROUS PAVING. AT LEAST 2" OF STONE SHALL COVER THE TOP OF ROOTS BEFORE FLEXIBLE POROUS MATERIAL IS LAID.

  3. WALKWAY SHALL MAINTAIN A CROSS PITCH OF NOT MORE THAN ONE AND A HALF (1.5%) PERCENT ANY DISCREPANCY NOT ALLOWING THIS TO OCCUR SHALL BE
- 3. WALKWAY SHALL MAINTAIN A CROSS PITCH OF NOT MORE THAN ONE AND A HALF (1.5%) PERCENT. ANY DISCREPANCY NOT ALLOWING THIS TO OCCUR SHALL BE REPORTED TO LANDSCAPE ARCHITECT PRIOR TO CONTINUING WORK.

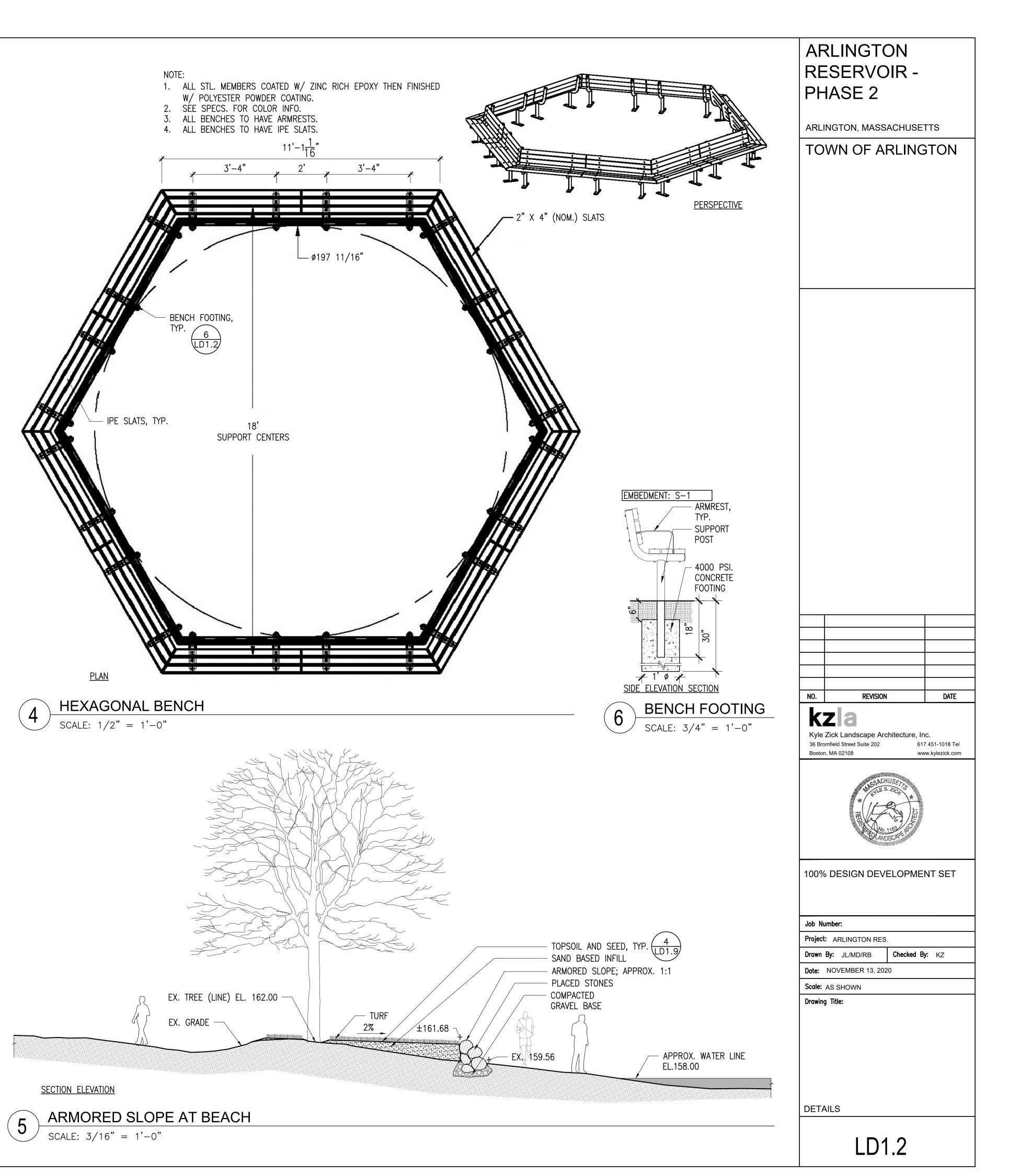
# RUBBER SURFACING - TRAIL (ADD ALTERNATE)

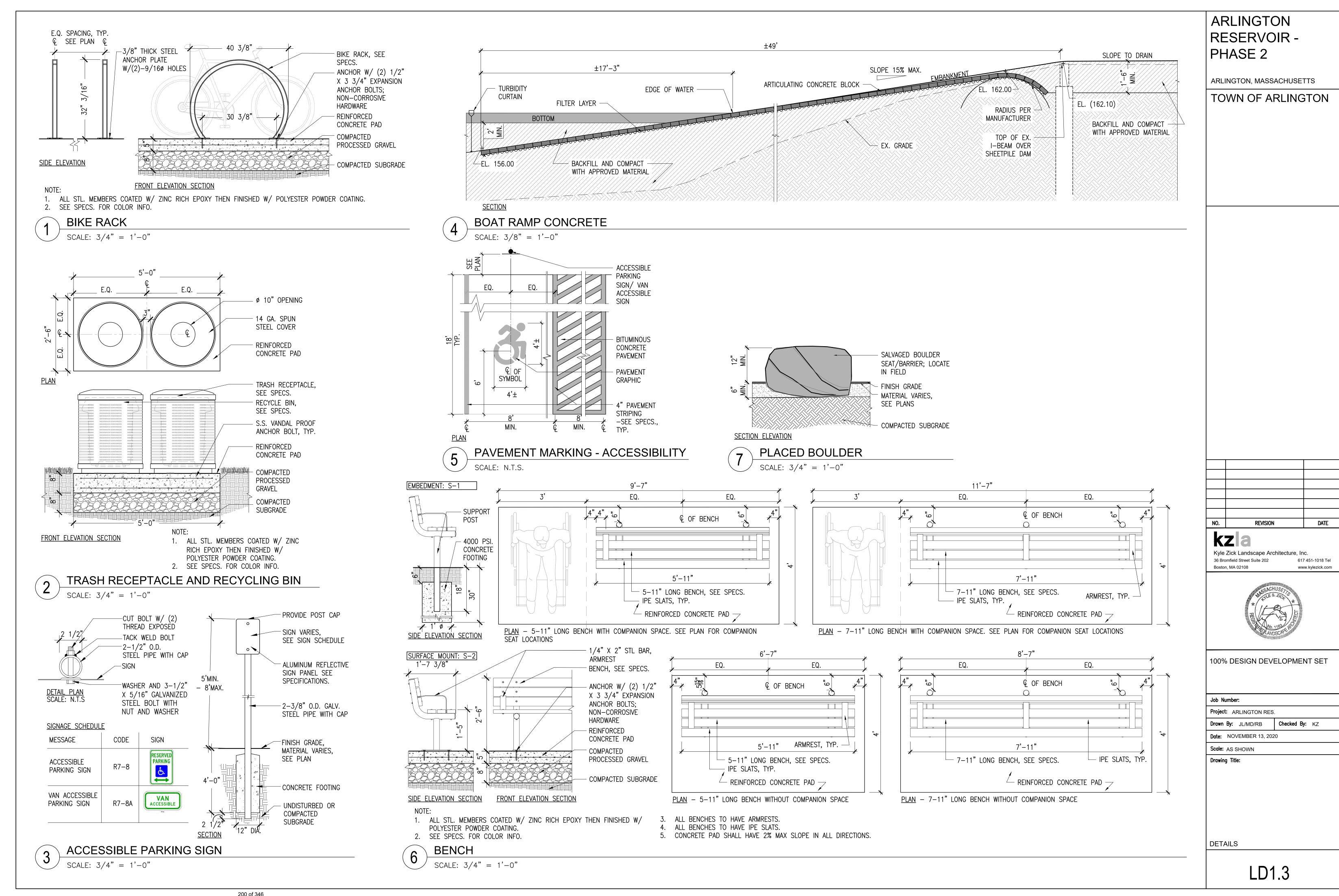


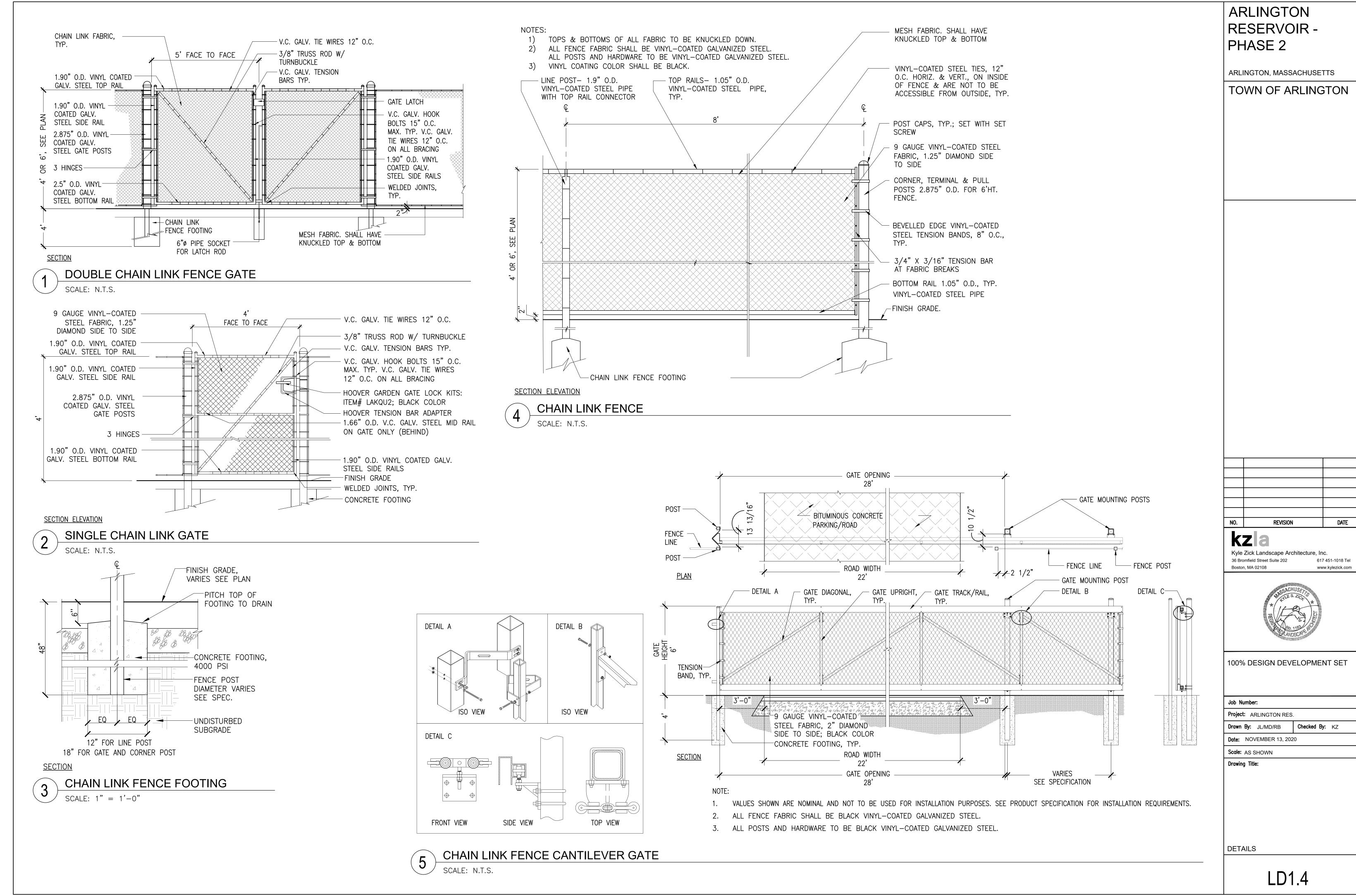
- 1. TO PREVENT INJURY TO CRITICAL ROOT ZONES OF ADJACENT TREES, SOIL IS TO BE EXCAVATED NON—INVASIVELY A MINIMUM OF 6 INCHES USING SUPERSONIC AIR KNIFE. FABRIC AND STONE ARE TO BE INSTALLED OVER AND AROUND ROOTS. SUBGRADE SHALL BE COMPACTED TO THE GREATEST EXTENT POSSIBLE. ROOT PRUNING MAY BE PERFORMED BY ARBORIST AS NEEDED ON SELECTED ROOTS LESS THAN 2 INCHES IN DIAMETER PROVIDED NO MORE THAN 15% OF THE CRITICAL ROOT ZONE IS REMOVED.
- 2. WHEREVER POSSIBLE, AND WITHOUT INJURING CRITICAL ROOT ZONES OF ADJACENT TREES. CRUSHED STONE BASE SHALL RUN 6 INCHES BEYOND THE END OF THE STONEDUST PAVING. AT LEAST 2" OF STONE SHALL COVER THE TOP OF ROOTS BEFORE STONEDUST IS LAID.
- 3. WALKWAY SHALL MAINTAIN A CROSS PITCH OF NOT MORE THAN ONE AND A HALF (1.5%) PERCENT. ANY DISCREPANCY NOT ALLOWING THIS TO OCCUR SHALL BE REPORTED TO LANDSCAPE ARCHITECT PRIOR TO CONTINUING WORK.

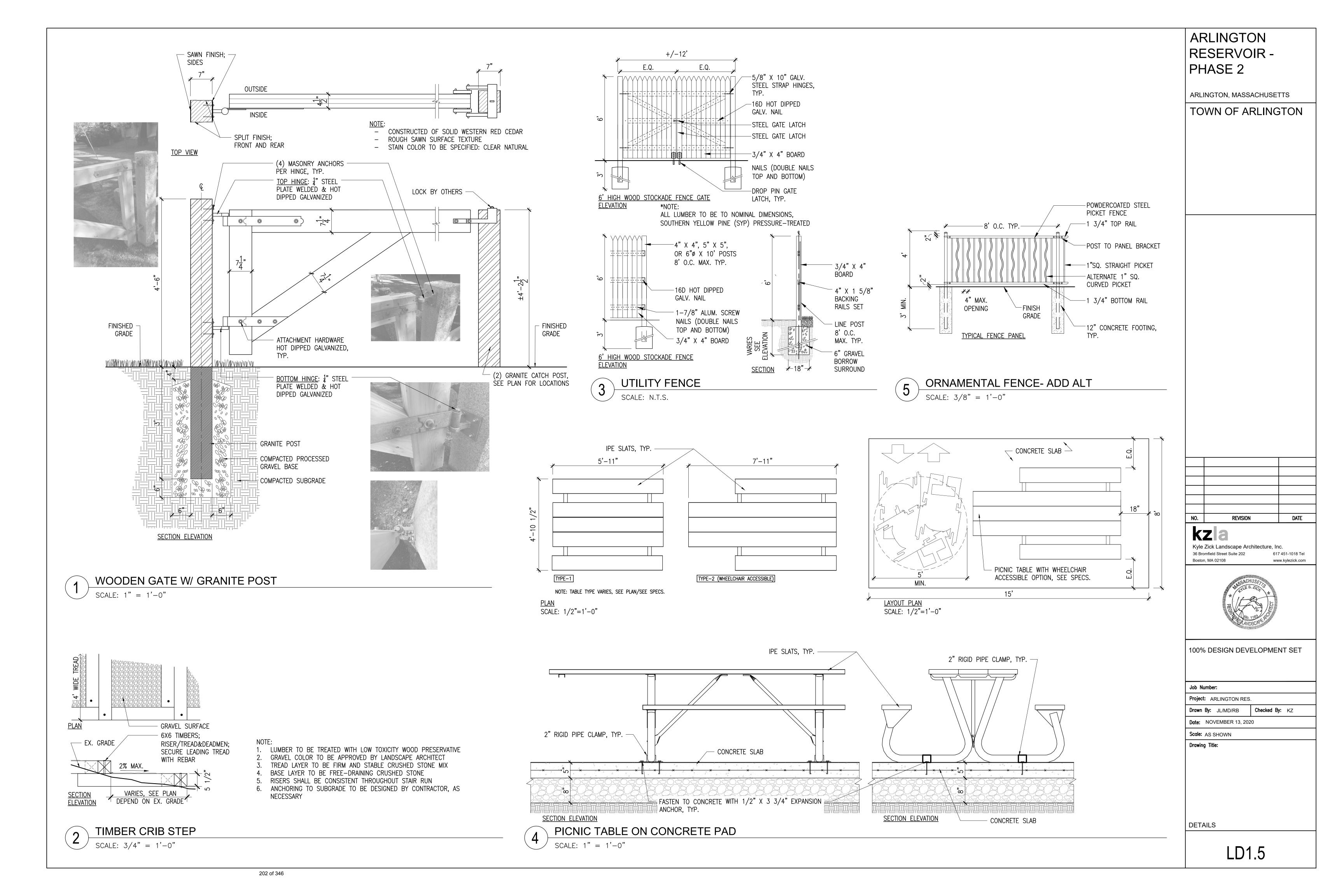
### STABILIZED CRUSHED GRANITE PAVEMENT OVER TREE ROOTS

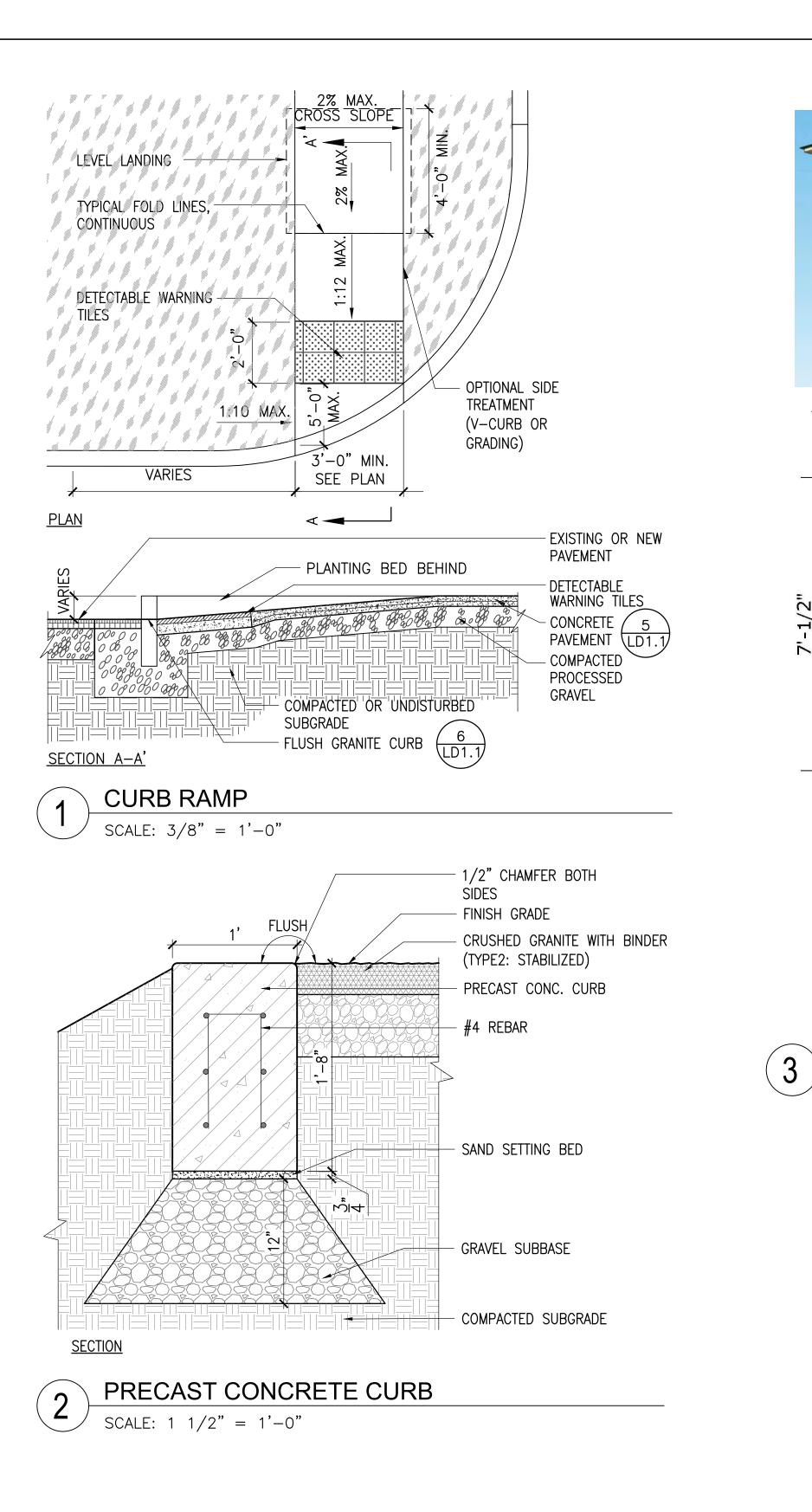
SCALE: 1" = 1'-0"

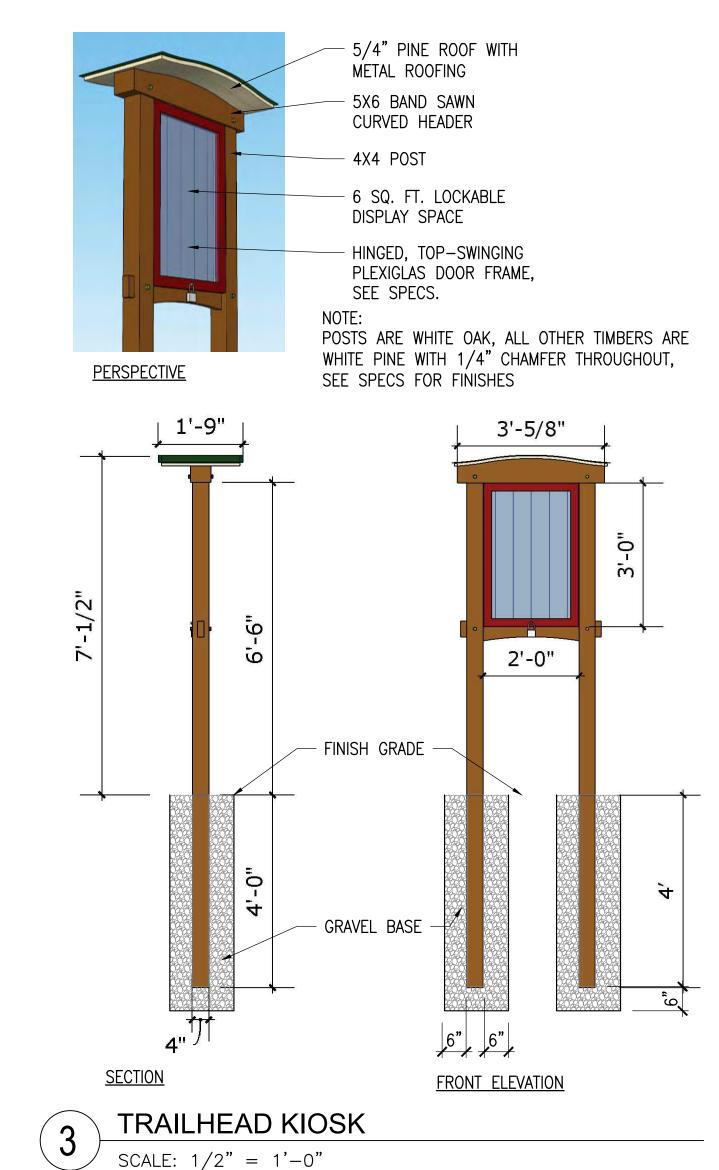


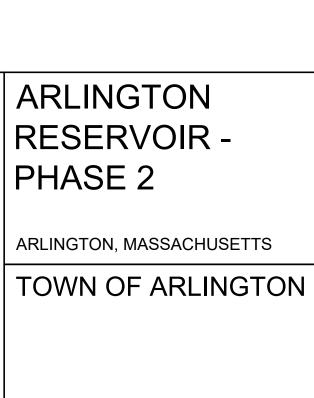












NO. REVISION DATE

Kyle Zick Landscape Architecture, Inc.
36 Bromfield Street Suite 202 617 451-1018 Tel
Boston, MA 02108 www.kylezick.com



100% DESIGN DEVELOPMENT SET

Project: ARLINGTON RES.

Drawn By: JL/MD/RB Checked By: KZ

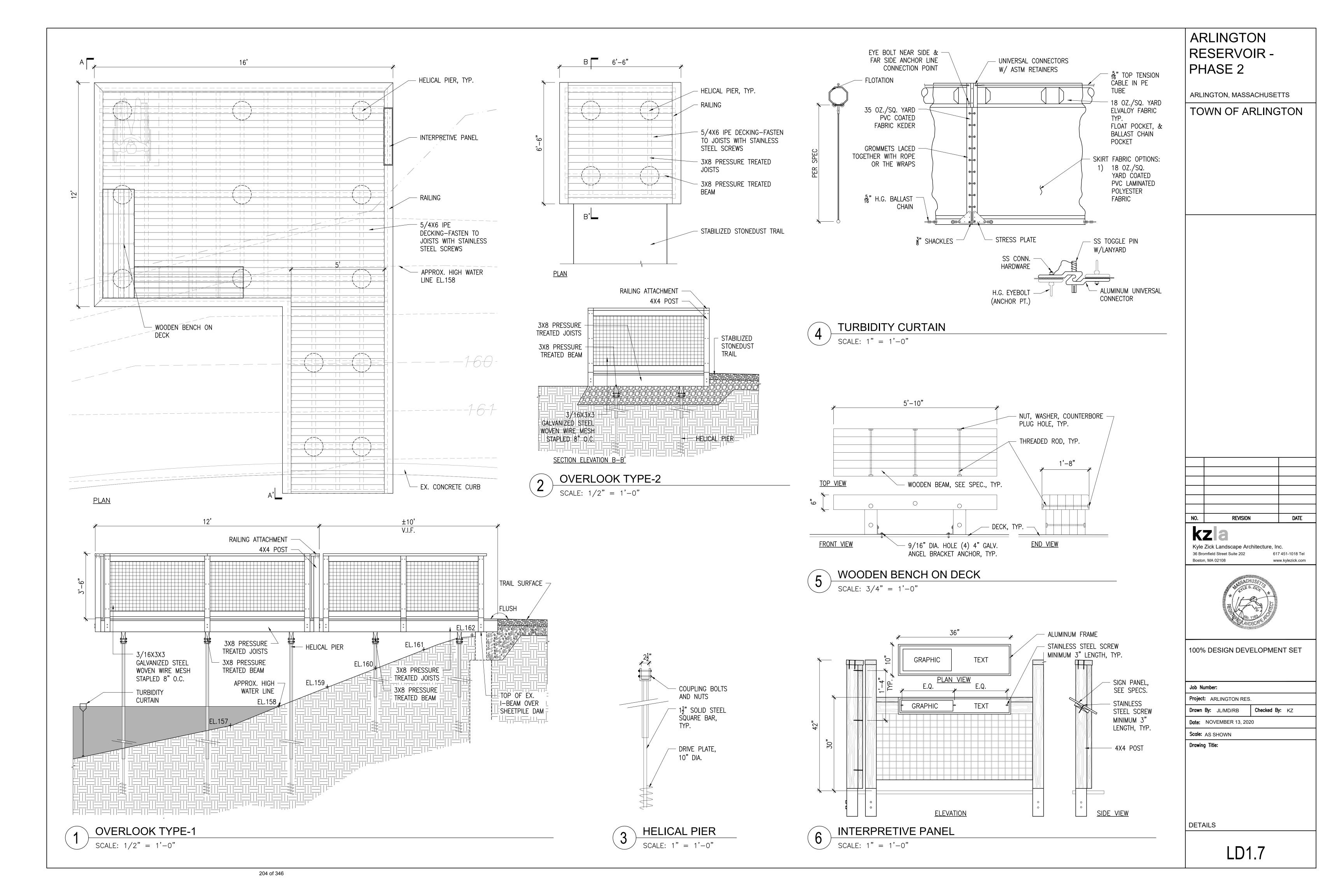
Date: NOVEMBER 13, 2020

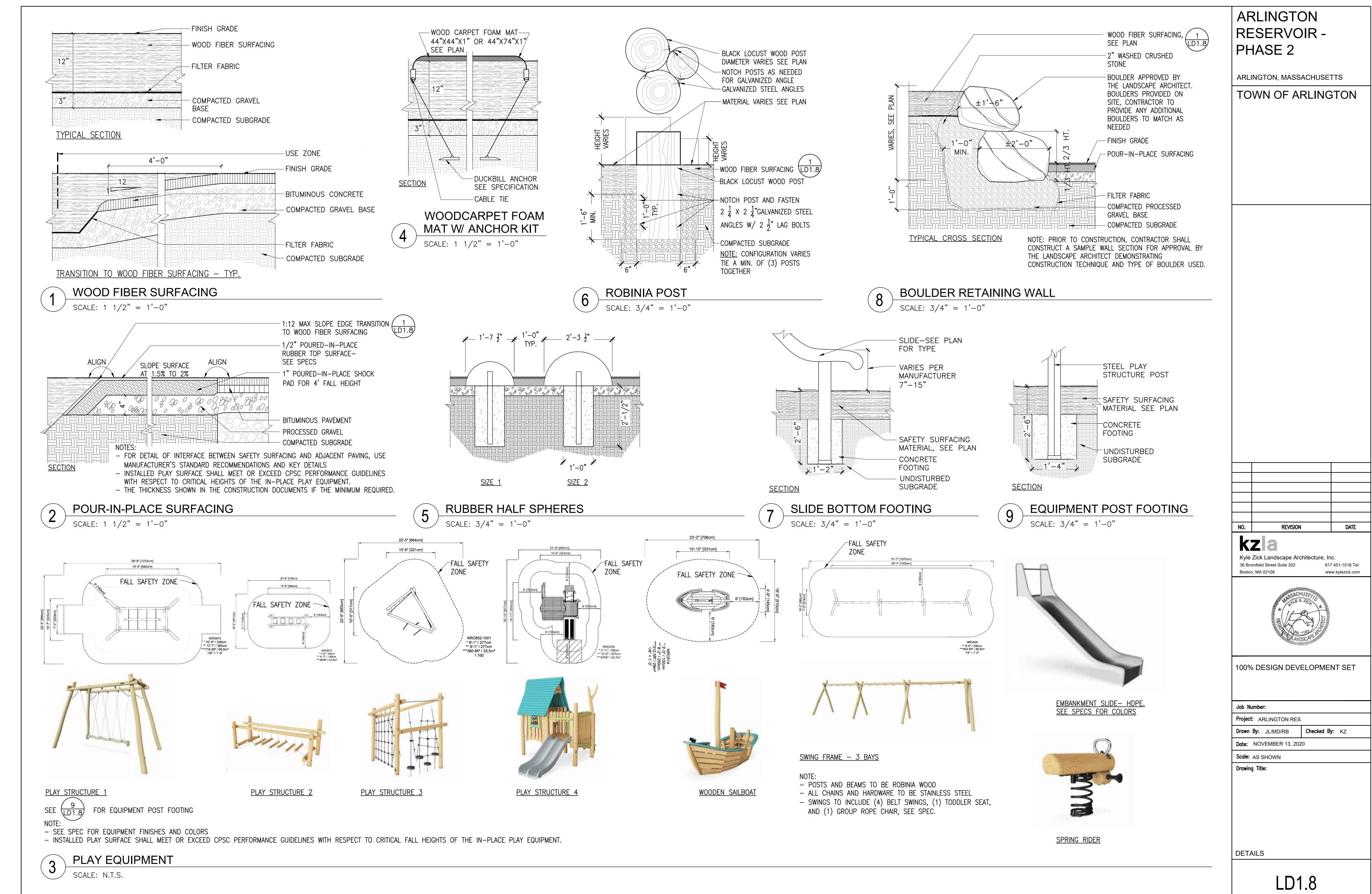
Scale: AS SHOWN

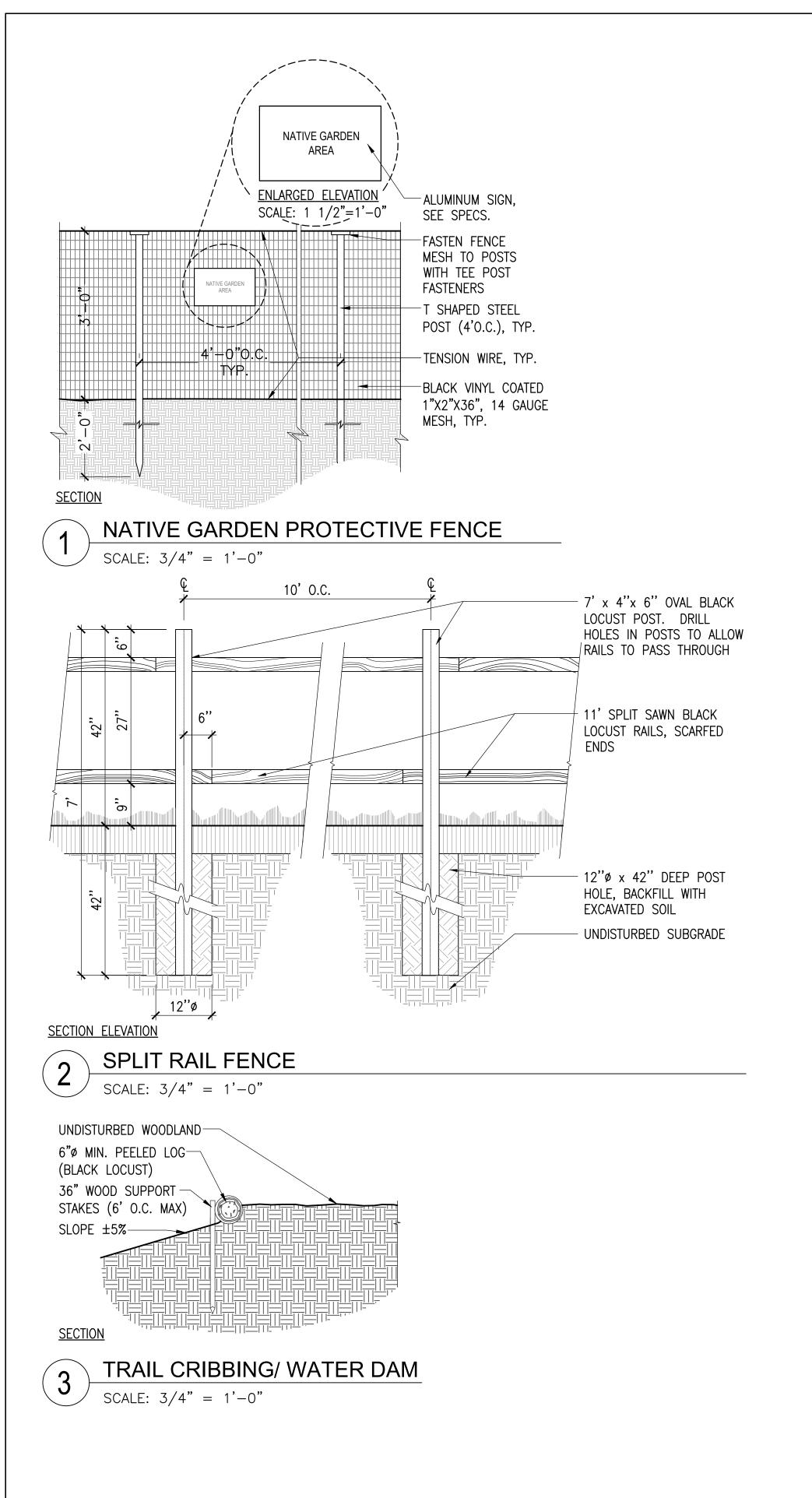
Drawing Title:

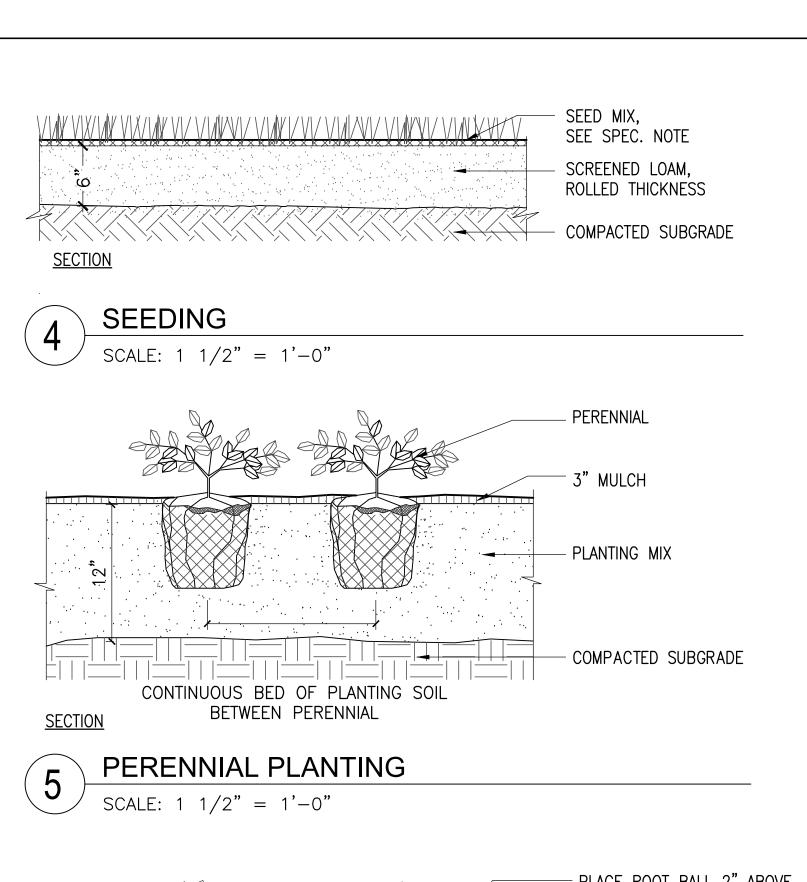
LD1.6

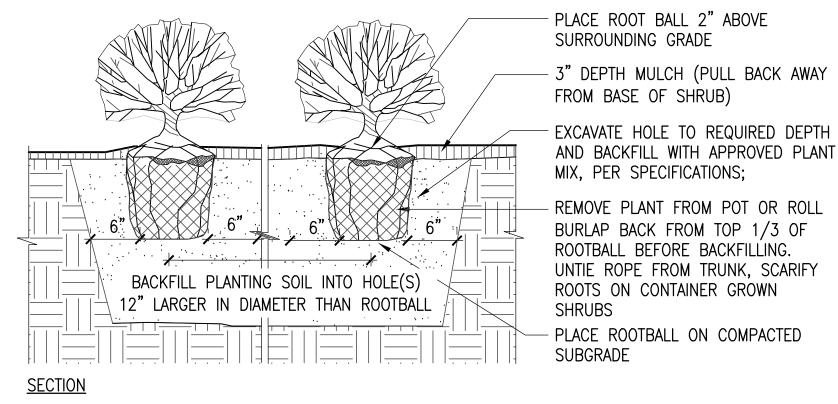
DETAILS



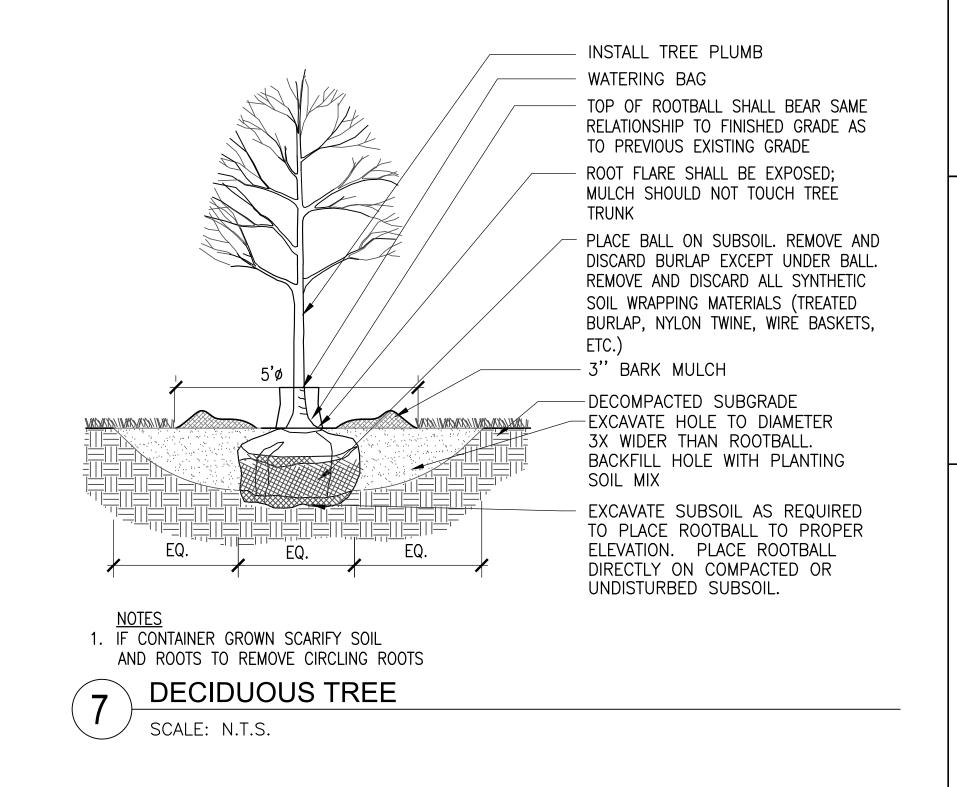


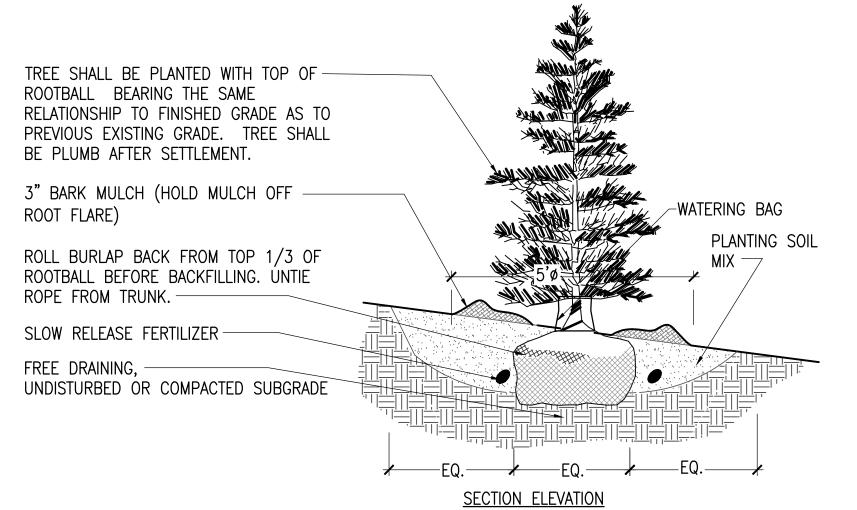


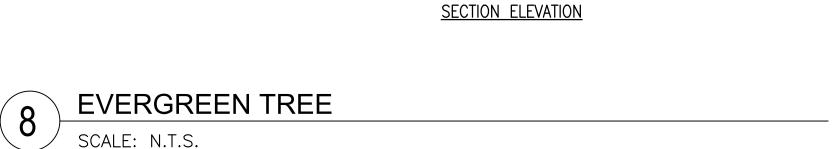


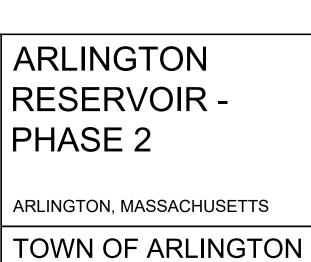












NO. REVISION DATE

Kyle Zick Landscape Architecture, Inc.
36 Bromfield Street Suite 202 617 451-1018 Tel
Boston, MA 02108 www.kylezick.com



100% DESIGN DEVELOPMENT SET

Job Number:

Project: ARLINGTON RES.

Drawn By: JL/MD/RB Checked By: KZ

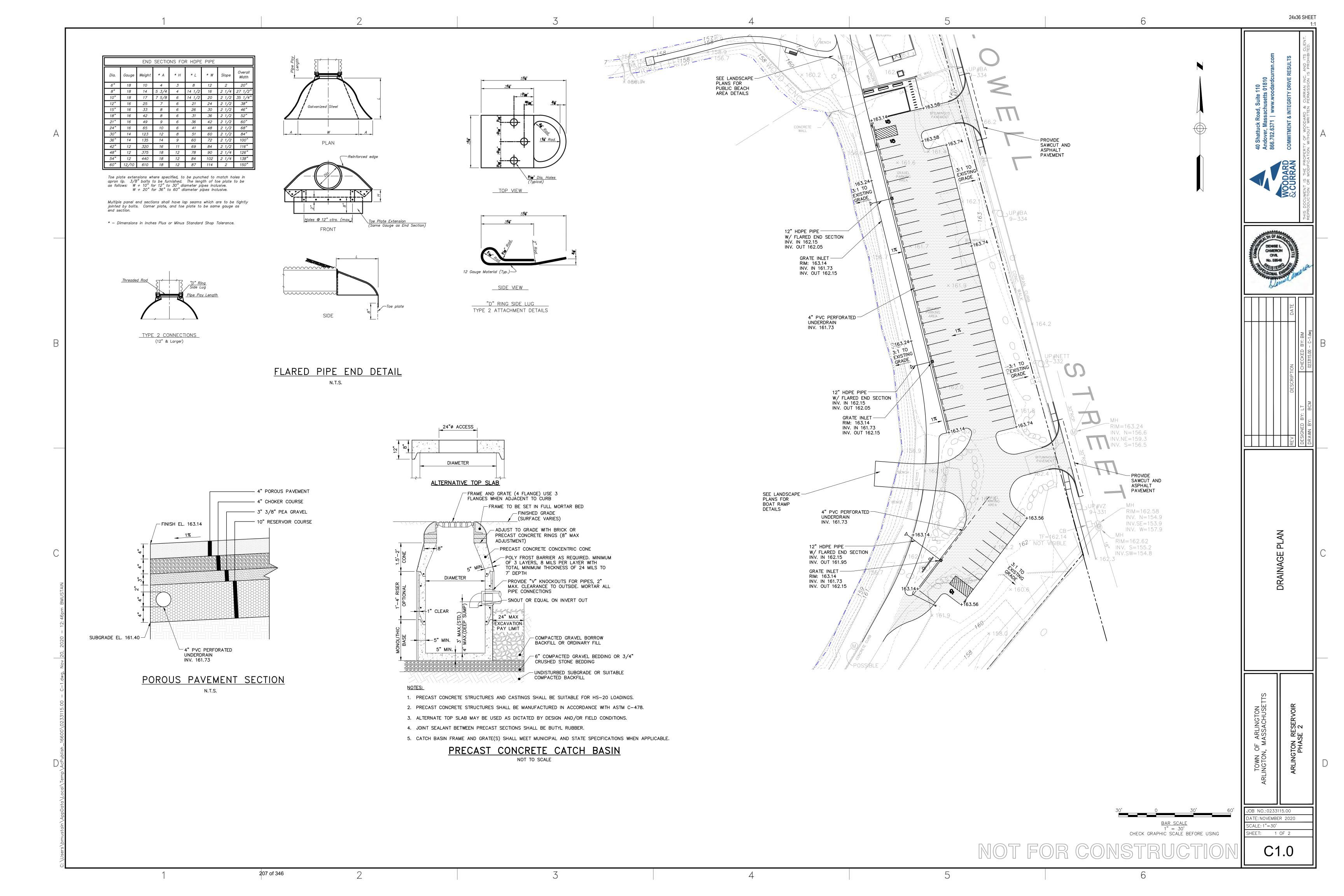
Date: NOVEMBER 13, 2020

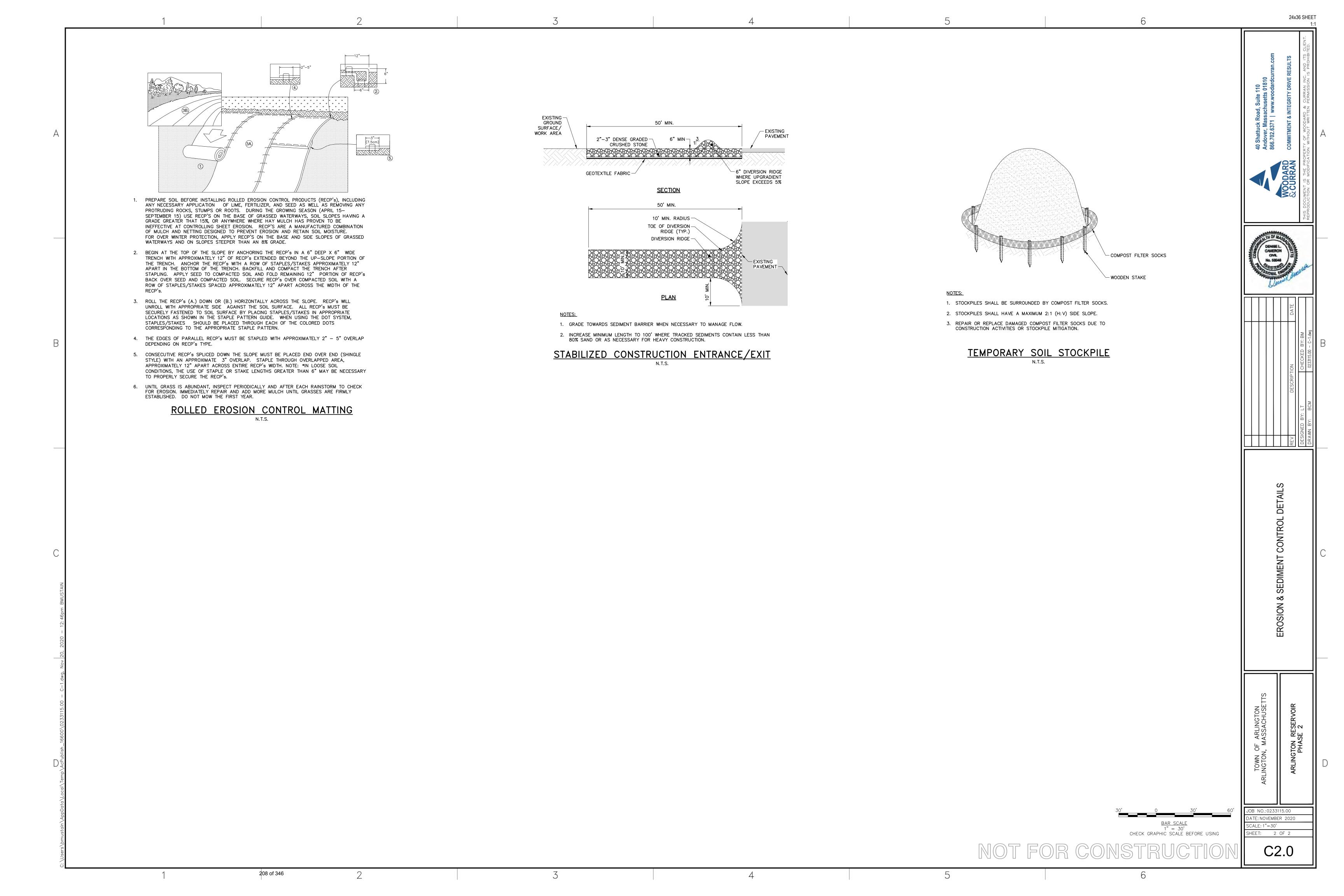
Scale: AS SHOWN

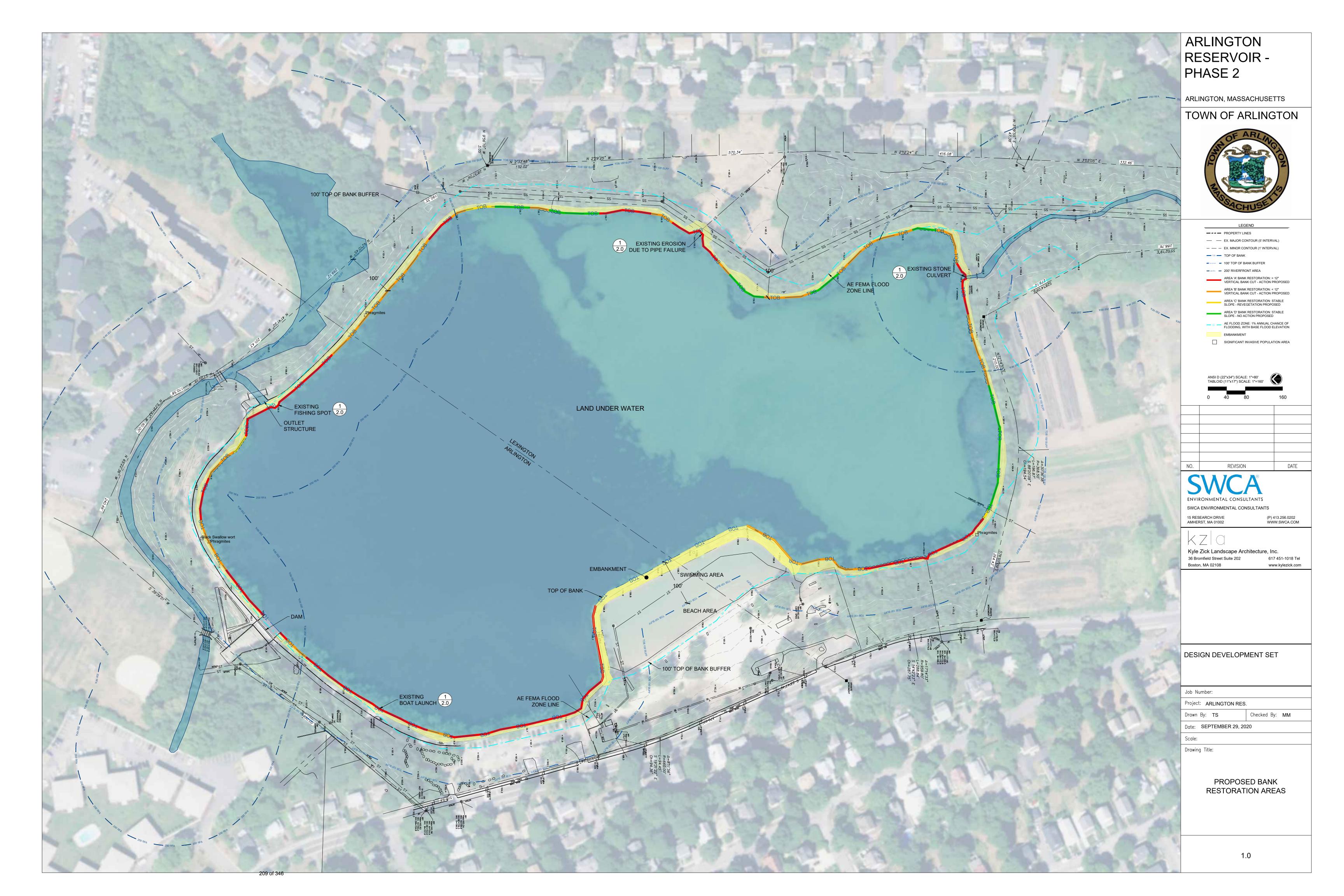
Drawing Title:

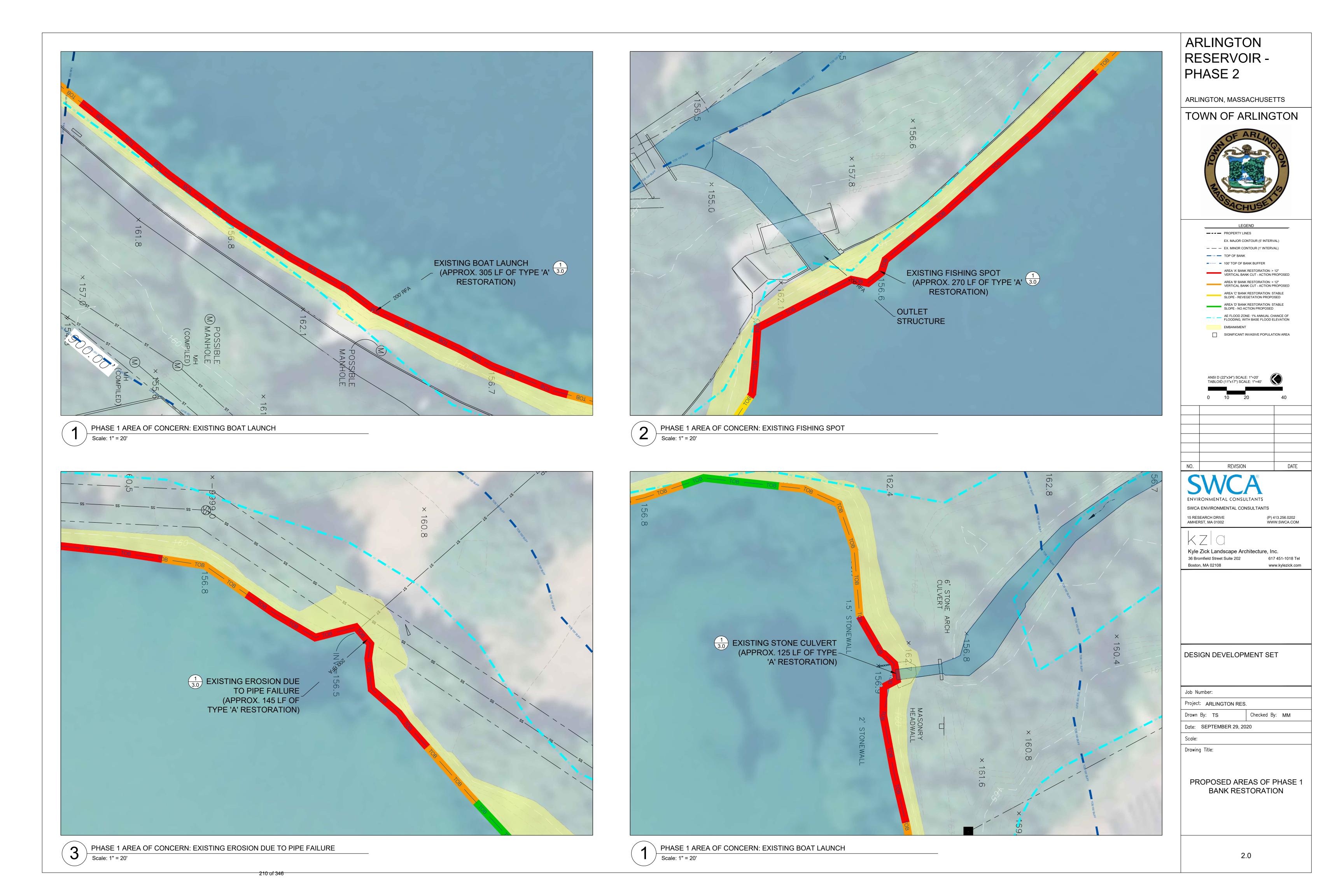
DETAILS

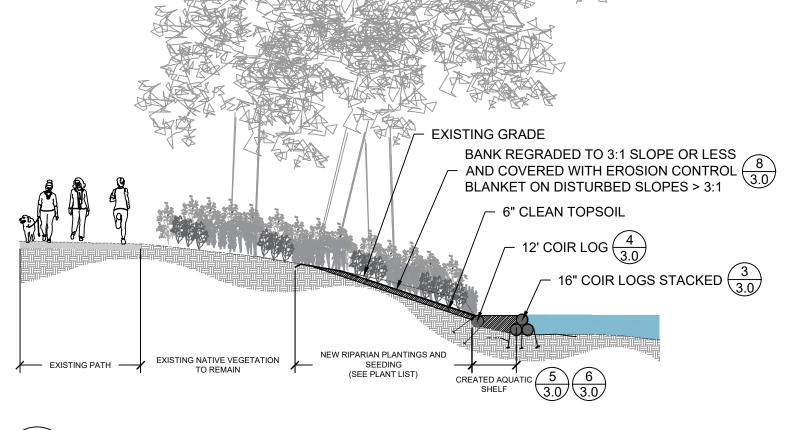
LD1.9





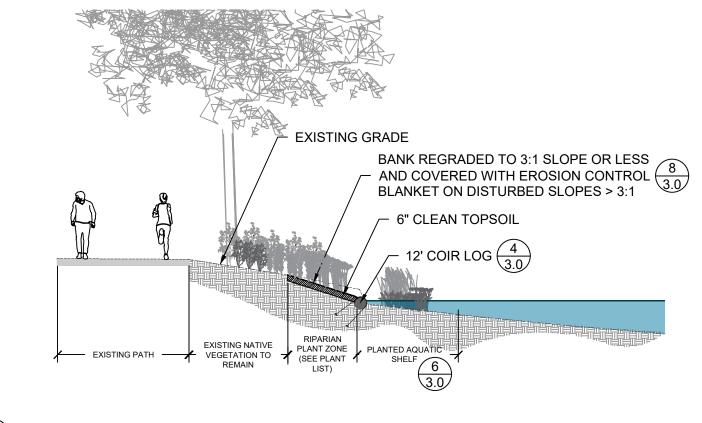


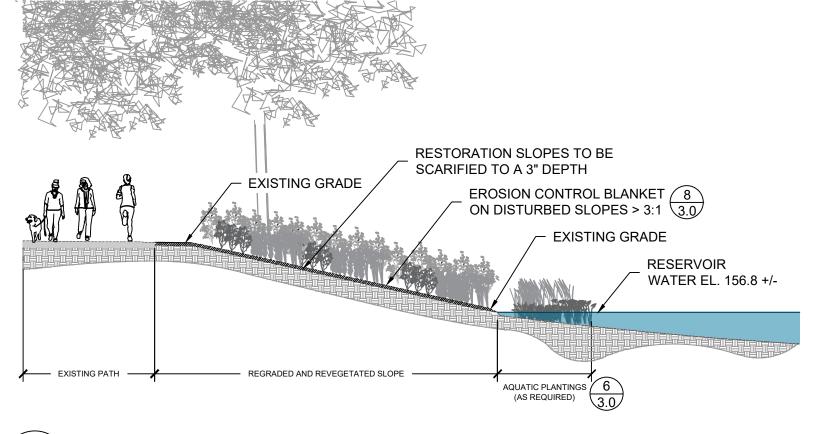


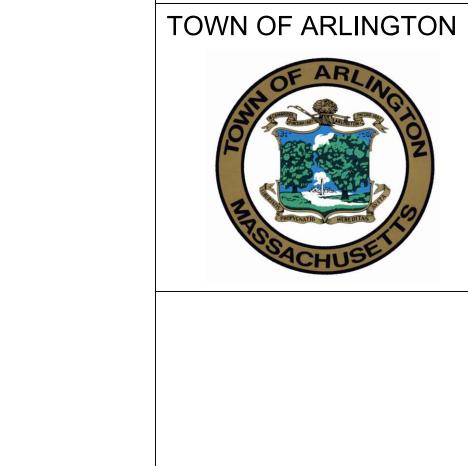


AREA 'A' BANK RESTORATION: > 12" VERTICAL BANK CUT (TYP.)

Scale: NTS







ARLINGTON

PHASE 2

RESERVOIR -

ARLINGTON, MASSACHUSETTS

AREA 'C' BANK RESTORATION: STABLE SLOPE - REVEGETATION (TYP.) Scale: NTS

NO. REVISION DATE

15 RESEARCH DRIVE AMHERST, MA 01002 (P) 413.256.0202 WWW.SWCA.COM Kyle Zick Landscape Architecture, Inc. 36 Bromfield Street Suite 202 617 451-1018 Tel

www.kylezick.com

SWCA ENVIRONMENTAL CONSULTANTS

Boston, MA 02108

DESIGN DEVELOPMENT SET

Job Number: Project: ARLINGTON RES. Checked By: MM Drawn By: TS Date: SEPTEMBER 29, 2020

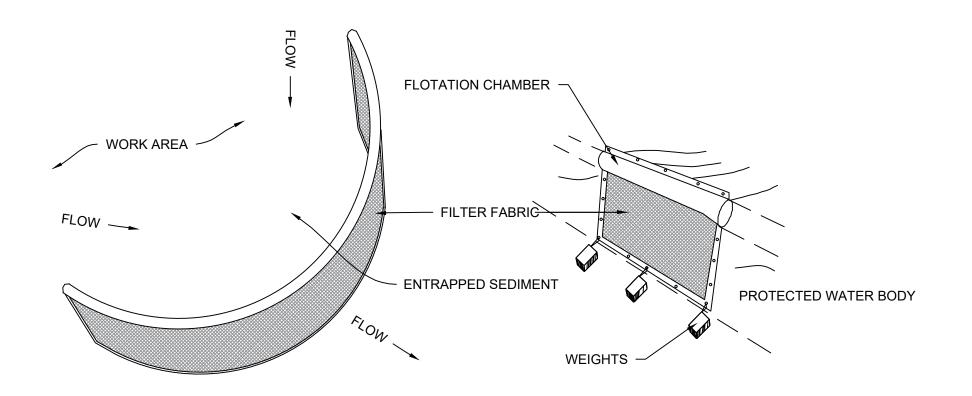
Drawing Title:

BANK RESTORATION SECTIONS

3.0

AREA 'B' BANK RESTORATION: < 12" VERTICAL BANK CUT (TYP.)

Scale: NTS



NOTE: TURBIDITY CURTAIN TO BE TEMPORARILY INSTALLED SURROUNDING ANY BANK OR BOAT RAMP WORK WHICH WILL DISTURB SOILS NEXT TO OPEN WATER. ONCE SUSPENDED SEDIMENT HAS CLEARED, THE TURBIDITY CURTAIN MAY BE REMOVED.

TURBIDITY CURTAIN DETAIL FOR IN-WATER SEDIMENT CONTROL (TYP.)

ADJACENT VEGETATION (SEE PLANT LIST) EXISTING GRADE - EROSION CONTROL BLANKET  $\left(\frac{8}{3.0}\right)$ POND SURFACE AT 156.8 +/-1/8" GRIPPLE 12" COIR LOG (FIELD LOCATED) TO BE SECURED WITH A PAIR OF DUCKBILL EARTH ANCHORS  $\frac{2}{3.0}$ EVERY 4 FT AND 1' FROM THE END OF THE LOG.  $\frac{2}{3.0}$ 1/8" GALVANIZED WIRE ROPE SECURED

ANCHORED A MINIMUM OF 3' BELOW GRADE NOTES:

#68 DUCKBILL EARTH ANCHORS

1. LOOP A 1/8" ZINC COATED WIRE THROUGH THE LOOP ENDS OF EACH DUCKBILL EARTH ANCHOR AND USE A 1/8" GRIPPLE WIRE TO SECURE THE LOOP. TIGHTEN GRIPPLE LOOP TO ENSURE A TIGHT FIT. 2. COIR LOGS MAY BE STACKED ON TOP OF EACH OTHER IN AREAS WITH A VERTICAL ERODED FACE OF OVER 2'-0" AS DIRECTED BY THE PROJECT DESIGNER.

PROTECTED RESOURCE AREA

UNDISTURBED SOIL

BIODEGRADABLE MATERIAL

TO EACH DUCKBILL EARTH ANCHOR

2"X2"X3' WOOD STAKES, EVERY

AREA OF DISTURBANCE -

5' O.C. PER STRAW WATTLE

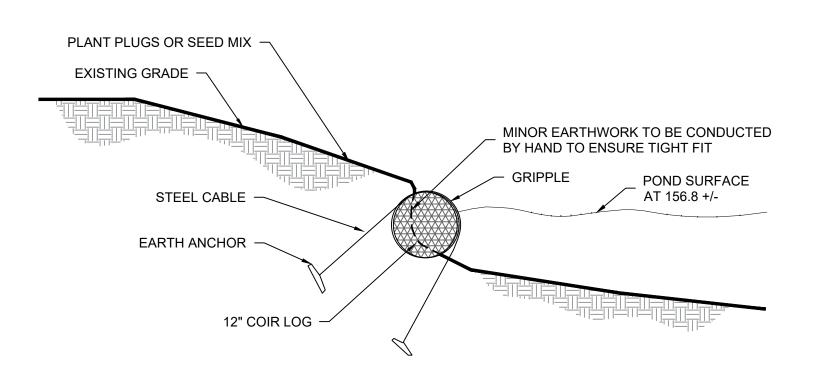
SET 3" BELOW GRADE

Scale: NTS

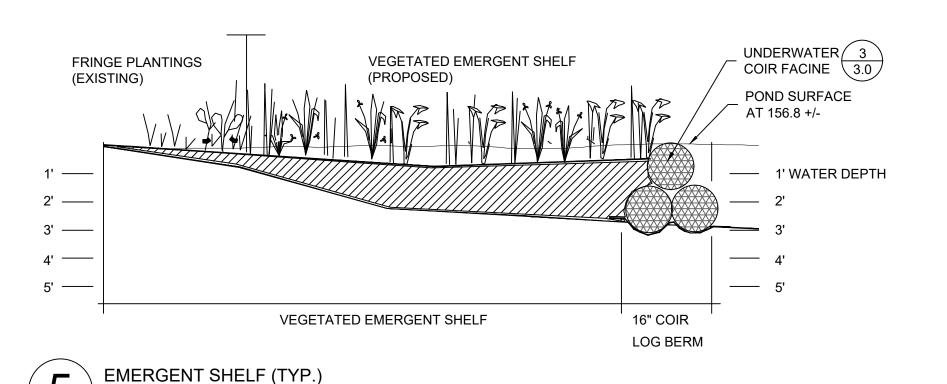
STRAW WATTLE EROSION CONTROL

STRAW WATTLES TO BE

COIR LOG INSTALLATION (TYP.) Scale: NTS



COIR FASCINE INSTALLATION (TYP.) Scale: NTS



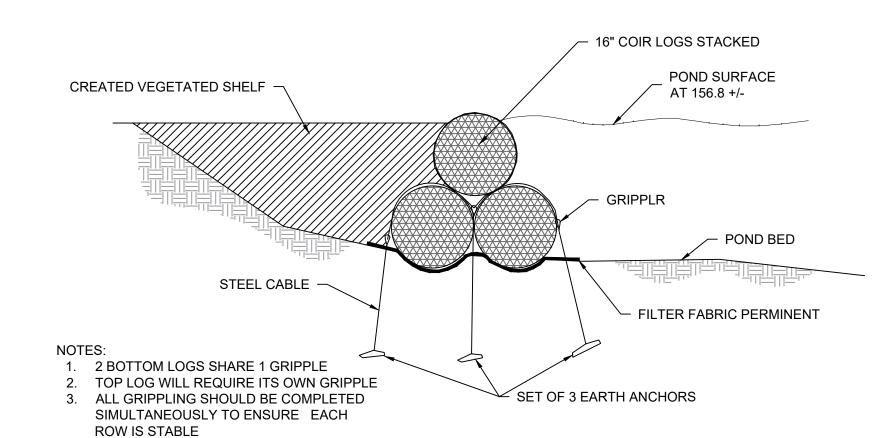
OVERLAP COIR MAT 8" MINIMUM TOE FABRIC INTO SLOPE A MINIMUM 2'-0" SLOPE STAPLE EVERY 18" O.C. IN \_\_THE MIDDLE OF THE FABRIC 70% STRAW, 30% COIR EROSION CONTROL FABRIC ON SIDE SLOPES. TOED INTO SOIL (MIN 2' ON THE TOP AND BOTTOM) AND STAPLED EVERY 12" ON THE EDGES AND 18" O.C. IN THE MIDDLE ⊥12" ON EDGE 6" METAL TURF STAPLE TOE FABRIC INTO SOIL A MIN. OF 2'-0" STRAW SHALL BE CLEAN AND FREE OF VIABLE SEED
 WATTLE CASING SHALL BE BURLAP OR SIMILAR

Scale: NTS

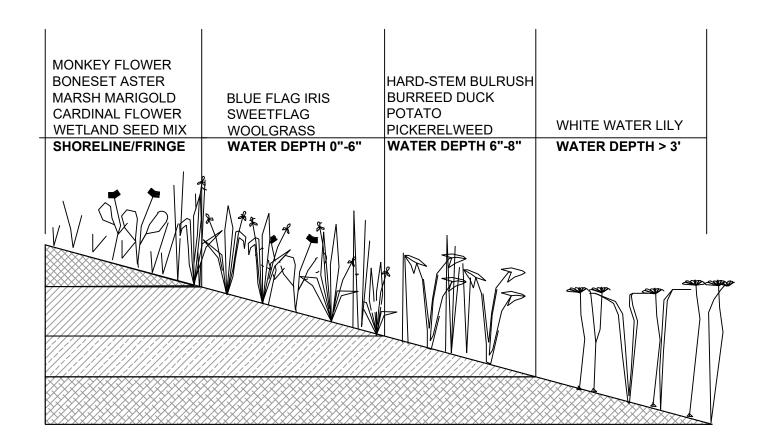
BIODEGRADABLE EROSION CONTROL FABRIC SLOPE STABILIZATION DETAIL Scale: NTS

**EROSION CONTROL FABRIC NOTES:** SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS TO ENSURE THAT THE EROSION CONTROL FABRIC WILL HAVE GOOD SOIL CONTACT.

- 2. APPLY PERMANENT SEEDING BEFORE PLACING EROSION CONTROL FABRIC.
- LAY FABRIC LOOSELY AND STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.
- 4. STAPLE FABRIC WITH 6" STAPLES. STAPLE FABRIC EVERY 12" ON SIDES, TOP AND BOTTOM. 18" O.C. IN THE MIDDLE OF THE FABRIC. (PER MANUFACTURES SPECIFICATIONS)
- 5. THE EROSION CONTROL FABRIC TO BE INSTALLED IN SECTIONS RUNNING FROM THE TOP TO THE BOTTOM OF THE SLOPE, ALONG THE ENTIRE AREAS AS SHOWN ON THE PLAN (PER MANUFACTURES SPECIFICATIONS)
- 6. EROSION CONTROL FABRIC SHALL USE BIODEGRADABLE (NON-PLASTIC) NETTING
- 7. TO BE USED ONLY IN AREAS OF TEMPORARY SOIL DISTURBANCE ON SLOPES ADJACENT TO THE POND.
- 8. FLAT SURFACES SHALL RECEIVE STRAW MULCH APPLIED TO THE GROUND SURFACE AT A RATE OF 2,500 LBS./ACRE.



COIR FASCINE INSTALLATION FOR BERM (TYP.) Scale: NTS



EMERGENT SHELF PLANTING ZONES (TYP.) Scale: NTS

# ARLINGTON RESERVOIR -PHASE 2

ARLINGTON, MASSACHUSETTS



SWCA ENVIRONMENTAL CONSULTANTS 15 RESEARCH DRIVE (P) 413.256.0202 AMHERST, MA 01002 WWW.SWCA.COM

Kyle Zick Landscape Architecture, Inc. 36 Bromfield Street Suite 202 617 451-1018 Tel Boston, MA 02108 www.kylezick.com

**DESIGN DEVELOPMENT SET** 

Job Number: Project: ARLINGTON RES.

Checked By: MM Drawn By: TS Date: SEPTEMBER 29, 2020

Scale:

Drawing Title:

BANK RESTORATION DETAILS

4.0

#### **EROSION CONTROL PLAN AND CONSTRUCTION SEQUENCING**

EROSION AND SEDIMENT CONTROL METHODS FOR THE PROJECT INCLUDE STRUCTURAL AND STABILIZATION PRACTICES. STRUCTURAL PRACTICES INVOLVE THE CONSTRUCTION OF DEVICES TO DIVERT AND LIMIT RUNOFF. STABILIZATION PRACTICES WILL BE IMPLEMENTED TO COVER EXPOSED SOIL SO THAT DISCHARGE OF SEDIMENT IS MINIMIZED. AN ADEQUATE STOCKPILE OF EROSION CONTROL MATERIALS WILL BE MAINTAINED AT THE PROJECT SITE IN THE EVENT OF AN EMERGENCY OR ROUTINE REPAIR.

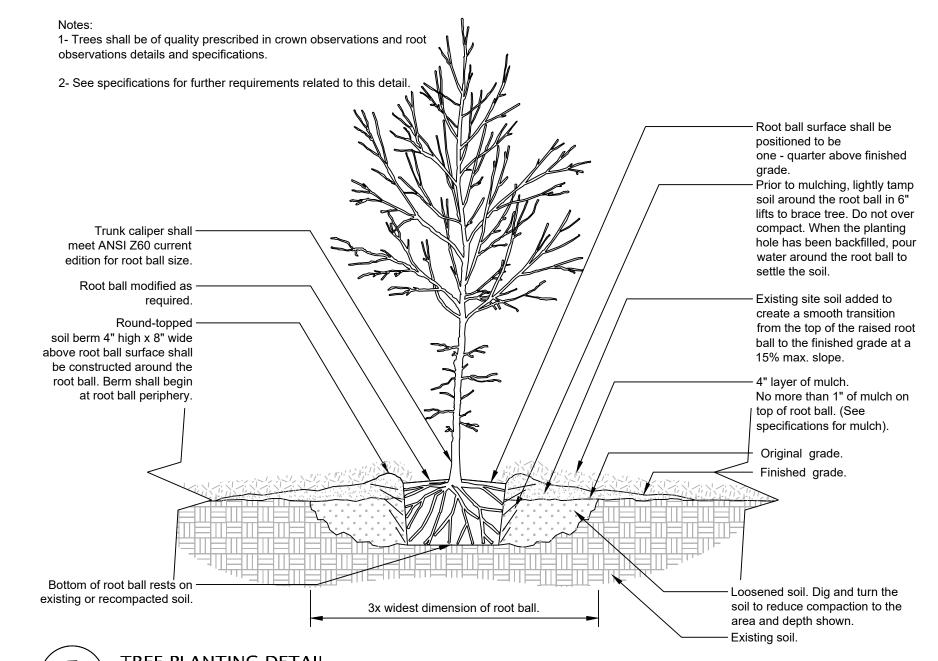
TO FURTHER MINIMIZE SEDIMENT LOSS ON THE SITE, A GENERAL CONSTRUCTION SEQUENCE PLAN HAS BEEN DEVELOPED. THE FOLLOWING ARE PROCEDURES TO BE FOLLOWED:

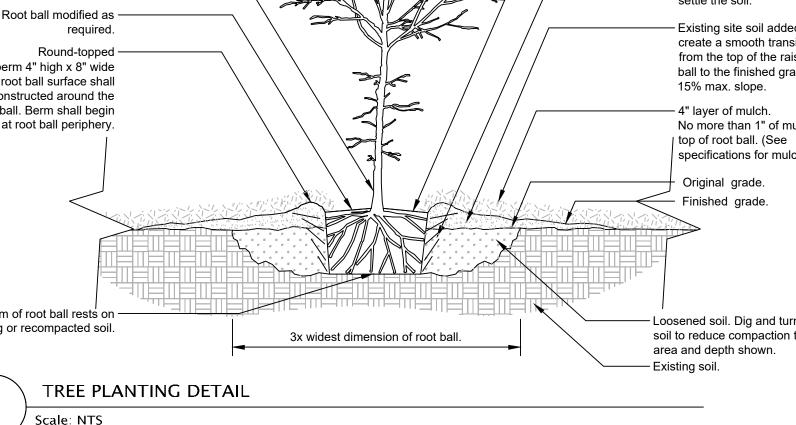
- 1. ALL VEHICLES AND EQUIPMENT BROUGHT TO THE PROJECT SITE SHALL BE CLEAN AND FREE OF INVASIVE PLANT MATERIAL.
- 2. THE WETLAND SPECIALIST SHALL MARK OUT RESOURCE BOUNDARIES IN IMPACT/RESTORATION AREAS IN THE FIELD PRIOR TO CONSTRUCTION.
- 3. PRIOR TO ANY SITE GRADING OR SITE WORK, THE CONTRACTOR SHALL INSTALL ALL SEDIMENT AND EROSION CONTROLS AS SHOWN ON THE RESTORATION PLAN, PLUS ANY ADDITIONAL CONTROLS REQUESTED BY THE WETLAND SPECIALIST BASED ON SITE CONDITIONS TO PREVENT SEDIMENT FROM LEAVING THE SITE OR FURTHER ENCROACHING INTO WETLANDS AND THE RESERVOIR.
- 4. THE CONTRACTOR FOREMAN SHALL BE DESIGNATED AS THE ON-SITE INDIVIDUAL RESPONSIBLE FOR THE DAILY MONITORING AND MAINTENANCE OF ALL SEDIMENT AND EROSION CONTROLS. ANY BREACH OR FAILURE IN SEDIMENT CONTROLS SHALL BE IMMEDIATELY REPAIRED OR REPLACED. SEDIMENT BUILD-UP BEHIND ANY EROSION CONTROL BARRIER SHALL BE REMOVED WHENEVER SEDIMENT HAS ACCUMULATED TO 3-INCHES IN DEPTH.
- 5. THE CONTRACTOR SHALL INCORPORATE PERMANENT EROSION CONTROL FEATURES, PERMANENT SLOPE STABILIZATION, AND VEGETATION INTO THE PROJECT PLANS AT THE EARLIEST PRACTICAL TIME TO MINIMIZE THE NEED FOR TEMPORARY CONTROLS.
- 6. ANY AREA DISTURBED WITHIN THE LIMIT OF BANK WORK IS TO BE SEEDED WITH NEW ENGLAND SEMI-SHADE GRASS AND FORBS SEED MIX UNLESS SPECIFIED OTHERWISE IN THE PLANTING PLAN. THE GROUND SURFACE SHALL BE SCARIFIED PRIOR TO SEEDING. AFTER SEEDING, STRAW MULCH SHALL BE APPLIED TO THE GROUND SURFACE AT A RATE OF 2,500 LBS./ACRE. SEEDED AND/OR PLANTED SLOPES GREATER THAN 3:1 SHALL BE COVERED WITH A BIODEGRADABLE EROSION CONTROL BLANKET SPECIFIED IN THE PLANS.
- 7. THE CONTRACTOR SHALL MAINTAIN TEMPORARY EROSION AND SEDIMENTATION CONTROL SYSTEMS IN GOOD CONDITION UNTIL THE SITE IS STABLE. AS VERIFIED BY THE WETLAND SPECIALIST. ONCE THE SITE IS STABLE, THE SEDIMENT AND EROSION CONTROLS MAY BE REMOVED UNDER THE DIRECTION OF THE
- 8. SHOULD ANY EROSION CONTROL BLANKET BE UTILIZED, THEY SHALL BE COMPRISED OF NON-SYNTHETIC MATERIALS (E.G., JUTE MATTING). NO EROSION CONTROL BLANKETS COMPOSED OF PLASTIC-BASED MATERIALS SHALL BE USED.

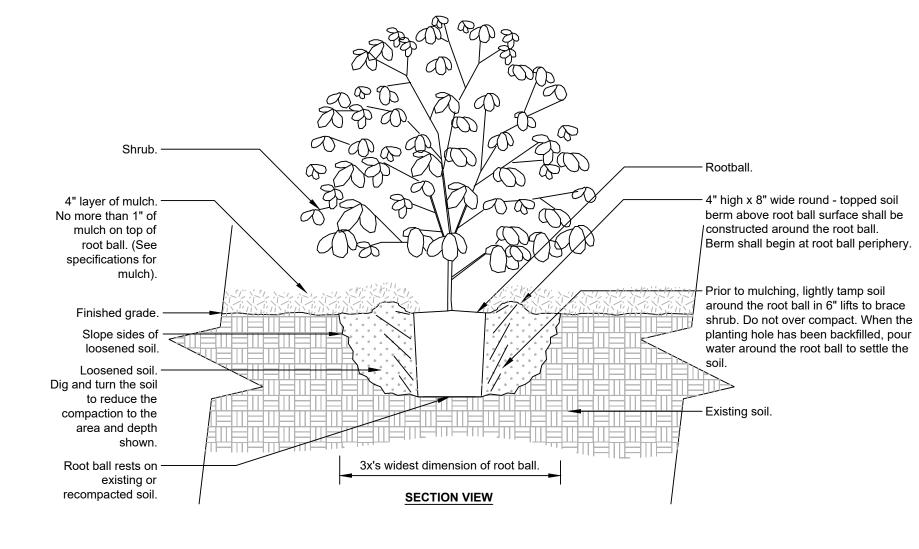
- 9. THE PURPOSE OF THIS RESTORATION PLAN IS TO IMPROVE BANK STABILITY OF ARLINGTON RESERVOIR BY REDUCING AND CONTROLLING SEDIMENTATION, RESTORING ERODED BANKS, AND ERADICATING NUISANCE VEGETATION.
- 10. THIS RESTORATION PLAN INCLUDES THREE ACTION OPTIONS DEPENDING ON THE EXTENT OF EXISTING EROSION CONDITIONS OBSERVED IN THE FIELD. BANK RESTORATION OPTIONS ADDRESS ONE OF THREE CONDITIONS A) VERTICAL BANK EROSION GREATER THAN 12 INCHES IN HEIGHT FROM THE WATER LINE, B) VERTICAL BANK EROSION LESS THAN 12 INCHES IN HEIGHT FROM THE WATER LINE, AND C) STABLE BANK EDGES WITH SLOPES DENUDED OF VEGETATION. AREAS INDICATED AS D) WERE OBSERVED TO BE STABLE AND SUFFICIENTLY VEGETATED AND REQUIRE NO ACTION.
- 11. ERODED PORTIONS OF POND EDGES ARE TO BE RESTORED WITH 12" BIODEGRADABLE COIR LOGS. COIR LOGS WILL BE INSTALLED BY HAND AND ASSOCIATED MINOR EARTHWORK WILL ALSO BE COMPLETED BY HAND OR WITH LIGHT MACHINERY. AREA OF RESERVOIR EDGES IMMEDIATELY UPGRADIENT OF COIR LOGS TO BE REVEGETATED AS NEEDED.
- 12. INVASIVE RIPARIAN AND AQUATIC WEEDS AND NUISANCE VEGETATION ARE TO BE REMOVED. REMOVAL TO BE CONDUCTED BY "HYDRO-RAKE" AND CHEMICAL TREATMENTS.
- 13. A FRIABLE "PLANTING BED" CONSISTENCY SHALL BE PREPARED. ANY COMPACTION CAUSED BY EXCAVATION SHALL BE ALLEVIATED.
- 14. THE RESTORATION AREAS ARE TO BE PLANTED WITH NATIVE WOODY SPECIES, THEN SEEDED WITH NATIVE SEED. (SEE PLANT LIST). PLANT SUBSTITUTIONS DUE TO COMMERCIAL AVAILABILITY OR HYDROLOGIC CONDITIONS MUST BE APPROVED BY THE WETLAND SPECIALIST.
- 15. THE EROSION CONTROL BARRIER BETWEEN THE RESERVOIR AND RESTORATION AREAS SHALL BE REMOVED UPON STABILIZATION OF THE RESTORATION AREAS AND THE AREA RAKED TO ELIMINATE ANY BERM THAT MAY BE PRESENT BETWEEN THE RESOURCE RESTORATION AREAS AND THE ADJACENT BVW OR RESERVOIR. ANY BARE SOIL THAT RESULTS FROM THE REMOVAL OF THE EROSION CONTROLS SHALL BE SEEDED WITH THE SPECIFIED SEED MIX. ALL STAKES AND TWINE SHALL BE REMOVED.

#### SEEDING GUIDANCE

- 16. SEED METHODOLOGY: THE FOLLOWING METHODOLOGY PROVIDES SEQUENCING FOR ESTABLISHING THE SEED MIXES PRESCRIBED ON IN THE PLANS. THIS PROCESS SHOULD BEGIN FOLLOWING FINAL GRADING. THIS METHODOLOGY DOES NOT SPECIFY A TEMPORARY COVER CROP. A COVER CROP MAY BE NEEDED TO STABILIZE THE SITE DEPENDING ON WEATHER CONDITIONS AND CONSTRUCTION TIMING RELATIVE TO THE SEASONS AND THE IDEAL TIME FRAME FOR ESTABLISHING THE SEEDED AREAS. THE BEST TIME TO SEED FOR THIS PROJECT IS IN THE SPRING WHEN THE SOILS ARE AT A NORMAL MOISTURE CONTENT LEVEL (MOIST, NOT SATURATED) AND NO LATER THAN JUNE 30. WEATHER FORECASTS SHOULD BE MONITORED AS OCCASIONAL WATERING MAY BE NECESSARY IF A DRY SPRING SEASON OCCURS. THE SEEDING SEQUENCE SHOULD BEGIN NO LONGER THAN 48 HOURS AFTER FINAL GRADING. SITE STABILIZATION TECHNIQUES SHOULD BE UTILIZED IN THIS 48-HOUR TIME PERIOD.
- 17. SOIL SCARIFICATION/ SEED BED PREPARATION: SEED BED PREPARATION IS THE PROCESS OF SCARIFYING AND LOOSENING THE SOIL SURFACE TO CREATE A LOOSE, FRIABLE, SOIL SURFACE. THE SOIL SURFACE SHOULD BE A UNIFORM PLANAR SURFACE THAT IS FLAT AND WITHOUT EXCESSIVE RIDGES, FURROWS, RUTS OR MOUNDS AND LOW SPOTS WHERE WATER CAN COLLECT. SOIL SCARIFICATION SHOULD ONLY OCCUR WHEN WEATHER, SOIL CONDITIONS, AND CONSTRUCTION PHASING ALLOWS FOR NO LONGER THAN 48 HOURS BETWEEN SCARIFICATION (THE BEGINNING OF THE SEEDING PROCESS) AND COVERING THE SEED WITH WEED FREE STRAW MULCH (NOT HAY), OR EROSION CONTROL BLANKET. THE SOIL SHOULD BE SCARIFIED TO MAXIMUM DEPTH OF 3 INCHES (SEE BELOW). DURING THIS PROCESS, AREAS WHERE COARSE GRAVEL DOMINATES THE SOIL SURFACE SHOULD BE IDENTIFIED AND AMENDED WITH FINE SANDY-SOIL COMMON BORROW GENERATED FROM ON-SITE EARTHWORK. THE IMPORTATION OF TOPSOIL SHOULD BE A LAST RESORT AND ONLY USED AS AN AMENDMENT FOR "LOCALIZED" SPOTS THAT LACK THE CHARACTERISTICS OF A SOIL SEED BED.
- 18. SEED APPLICATION: A WELL-PREPARED SEED BED PROVIDES A LOOSE FRIABLE SOIL SURFACE FOR WHICH THE SEED CAN BE SOWN INTO. SEED APPLICATION IS A TWO-PART PROCESS: 1) SEED APPLICATION AT PROPER RATES PER ACRE AND 2) SOW THE SEED INTO THE SOIL ¼ TO ½" DEPTH MAXIMUM. APPROPRIATE SEED RATES FOR EACH PRESCRIBED SEED MIX ARE SPECIFIED ON THE ACCOMPANYING DETAILS SHEET.
- a. SEEDING BY HAND: CHECK THE SEED LABEL PRIOR TO OPENING THE BULK BAG TO CONFIRM THE CORRECT SEED IS BEING APPLIED TO THE SPECIFIED LOCATION. THE BULK BAGS OF SEED SHOULD BE AGITATED BY HAND ON SITE TO REDISTRIBUTE THE SEEDS IN THE MATRIX BEFORE SPREADING. IN BARE AREAS A WEED FREE STRAW MULCH MAY BE USED TO COVER THE SOIL SURFACE FOLLOWING THE SEED APPLICATION.
- b. SOWING THE SEED: ONCE THE SEED IS SPREAD THE SEED MUST BE SOWN INTO THE SOIL TO THE DEPTH ABOVE TO INCREASE CHANCES OF GERMINATION BY KEEPING SOIL MOISTURE CLOSE TO THE SEED. THE SEED CAN BE SOWN BY A NUMBER OF WAYS INCLUDING "TRACKED" IN WITH A LOW PSI RUBBER TIRE OR TRACKED MACHINE, USING A YORK LANDSCAPE RAKE OR SIMILAR, OR THE TRADITIONAL MEANS OF USING A METAL LEAF RAKE.
- 19. RESEEDING: AREAS TO BE RESEEDED SHALL FOLLOW THE SAME SEEDING SEQUENCE OUTLINED ABOVE. IT IS EXPECTED THAT SOME SEEDED AREAS MAY NOT GERMINATE, BUT THAT OVER TIME THE PLANTED AREAS SHALL FILL IN THROUGH SEED PROLIFERATION AND GROWTH HABITS. AREAS LARGE ENOUGH TO BE IDENTIFIED THROUGH MONITORING AS BEING DOMINATED BY WEEDS OR OTHER INVASIVE SPECIES THAT HAVE OUT COMPETED THE SPECIFIED SEED MIX OR AREAS DEEMED UNSTABLE DUE TO LOW PLANT GROWTH SHALL BE RESEEDED ACCORDINGLY.
- 20. PLANT SUCCESSION NOTES: IT IS POSSIBLE THAT OVER TIME SOME SEEDED AREAS MIGHT BECOME DOMINATED BY NATIVE PLANT SPECIES EXISTING IN THE SOIL SEED BANK. ONE EXAMPLE OF THIS IS THE LIKELIHOOD THAT VARIOUS TYPES OF NATIVE FERNS COULD EMERGE IN SHADED AREAS. NO SPECIES OF FERNS ARE IN THE PRESCRIBED SEED MIX BUT ARE HIGHLY DESIRABLE SPECIES THAT CAN EXIST AND THRIVE IN THE IDENTIFIED PLANTING AREAS ADDING TO LANDSCAPE DIVERSITY. NATIVE SPECIES SUCH AS FERNS THAT EMERGE DUE TO BEING IN THE SOIL SEED BANK SHOULD REMAIN. THOROUGH AND REGULAR MONITORING DURING THE MATURATION OF THE ESTABLISHMENT AREAS IS A KEY COMPONENT TO BALANCING AREAS TO BE RESEEDED AND AREAS WHERE SUCCESSIONAL PLANT GROWTH OF NATIVES SHOULD BE ALLOWED TO THRIVE.





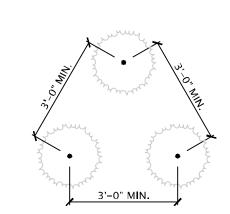


1- Shrubs shall be of quality prescribed in the root observations detail and specifications.

2- See specifications for further requirements related to this detail.

SHRUB PLANTING DETAIL

To. o. o. man
Junuary Junuar
10'-0" MIN.
TREE SPACING ( TYP.)



Scale: NTS



### New England Semi-Shade Grass and Forbs Mix

Botanical Name	Common Name	Indicator
Elymus virginicus	Virginia Wild Rye	FACW-
Elymus canadensis	Canada Wild Rye	FACU+
Festuca rubra	Red Fescue	FACU
Chamaecrista fasciculata	Partridge Pea	FACU
Liatris spicata	Spiked Gayfeather/Marsh Blazing Star	FAC+
Onoclea sensibilis	Sensitive Fern	FACW
Aster prenanthoides (Symphyotrichum prenanthoide)	Zigzag Aster	FAC
Eupatorium fistulosum (Eutrochium fistulosum)	Hollow-Stem Joe Pye Weed	FACW
Eupatorium perfoliatum	Boneset	FACW
Juncus tenuis	Path Rush	FAC
Apply: 30 lbs/acre		

NEW ENGLAND SEMI-SHADE GRASS AND FORBS MIX Scale: NTS Source: Seed mixes referenced herein are provided by New England Wetland Plants, Inc.

over Type	Abbrev.	Scientific Name	Common Name	Plant Size @ Installation	Area 'A'	Area 'B'	Area 'C'	rea 'D'
	•		Total Enhancement Area (If)		2,120	1,650	130	680
			Total Enhancement Area Approx. (sf)		31,800	24,750	1,950	10,200
rees								
	Ar	Acer rubrum	Red Maple	4'-6' ht. min.		9	3	
	Ва	Betula alleghaniensis	Yellow Birch	4'-6' ht. min.		9		
	Вр	Betula populifolia	Grey Birch	4'-6' ht. min.		9		
	Ns	Nyssa sylvatica	Black Gum	4'-6' ht. min.		9	3	
	Pd	Populus deltoides	Cottonwood	4'-6' ht. min.		9		
	Qr	Quercus rubra	Red Oak	4'-6' ht. min.		9	3	
	Sd	Salix discolor	Pussywillow	4'-6' ht. min.		9	3	
	Sn	Salix nigra	Black Willow	4'-6' ht. min.	-	9	3	
Shrubs	•							
	Ca	Clethra alnifolia	Sweet Pepperbush	3'-4' ht. min.	50	27	6	
	Cs	Cornus sericea	Red Osier Dogwood	3'-4' ht. min.	50	27	6	
	V	Ilex verticillata	Winterberry	3'-4' ht. min.	50	27	6	
	Vd	Viburnum dentatum	Northern Arrowwood	3'-4' ht. min.	50	27	6	
Herbacious							,	
- Shoreline/Fringe	Ср	Caltha palustris	Marsh Marigold	2" plug	2,100	1,800	150	
	Ер	Eupatorium perfoliatum	Boneset Aster	2" plug	2,100	1,800	150	
	Mr	Mimulus ringens	Monkey Flower	2" plug	2,100	1,800	150	
- Water Depth 0"-6"	Am	Acorus americana	Sweetflag	2" plug	2,100	1,800	150	
	Lc	Lobelia cardinalis	Cardinal Flower	2" plug	2,100	1,800	150	
	V	Iris versicolor	Blue Flag Iris	2" plug	2,100	1,800	150	
- Water Depth 6"-8"	Рс	Pontederia cordata	Pickerelweed	2" plug	1,350	1,050	450	
	Sa	Schoenoplectus acutus	Hard-stem Bulrush	2" plug	1,350	1,050	450	
	Sc	Scirpus cyperinus	Woolgrass	2" plug	1,350	1,050	450	
	SI	Sagittaria latifolia	Duck Potato	2" plug	1,350	1,050	450	
	Sm	Sparganium americanum	Burreed	2" plug	1,350	1,050	450	
- Water Depth > 3'	No	Nymphaea odorata	White Water Lily	tuber		5,220	5,850	
Seed Mix			<del>.</del>					
	New End	aland Erosion Control/Restorat	ion Mix For Detention Basins and Moist Sites (Lbs)	18lbs/acre	13.0	11.0	1.0	

ree quantities specified are based off the USDA New England Forest. Baseline for New England Forest Health Monitoring report.

Trees shall be installed not less than 10 feet on center and no farther than 12 feet on center. Shrubs shall be planted in clusters of 2 or 3, and shall be installed not less than 3 feet on center.

Areas within planting areas not 100% vegetated with existing herbaceous plants will be seeded with the appropriate seed mix at the manufacturers specified rate to cover the bare area. A wetland scientist or landscape architect shall provide supervision of the plant layout.

Plant substitutions may be necessary due to commercial availability. Substitutions shall be approved by the supervising wetland scientist or landscape architect.

Invasive species control semi-annually for the first two-years

Area A woody material assumes 50% slope coverage of upland areas based on the USDA New England Forest prescribed rate of 240 trees per acre and 75% shrub cover at the prescribed spacing above Area B woody material assumes 50% slope coverage of upland areas based on the USDA New England Forest prescribed rate of 240 trees per acre and 75% shrub cover at the prescribed spacing above

Area C woody material assumes 25% slope coverage of upland areas based on the USDA New England Forest prescribed rate of 240 trees per acre and 75% shrub cover at the prescribed spacing above Fringe and aquadic vegetation assumes an average of 3 square feet of planting area per linear foot at 12-inch on center spacing for each community



PLANT SCHEDULE

ARLINGTON **RESERVOIR -**PHASE 2

ARLINGTON, MASSACHUSETTS

TOWN OF ARLINGTON



SWCA ENVIRONMENTAL CONSULTANTS 15 RESEARCH DRIVE (P) 413.256.0202

AMHERST, MA 01002

Kyle Zick Landscape Architecture, Inc. 36 Bromfield Street Suite 202 617 451-1018 Tel Boston, MA 02108 www.kvlezick.com

WWW.SWCA.COM

DESIGN DEVELOPMENT SET

Job Number: Project: ARLINGTON RES. Checked By: MM Drawn By: TS Date: SEPTEMBER 29, 2020

Drawing Title:

BANK RESTORATION DETAILS AND NOTES

5.0

# **Notice of Intent**

Arlington Reservoir Bathing Beach Improvements and Walking Path Improvement Pilot Test

December 2018

Prepared for:

Town of Arlington Recreation Department

Submitted to:

Arlington Conservation Commission



Weston & Sampson Five Centennial Drive Peabody, MA 01960-7985

www.westonandsampson.com

Tel: 978-532-1900 Fax: 978-977-0100



5 Centennial Drive, Peabody, MA 01960 (HQ)

# Arlington Reservoir – Bathing Beach and Walking Path WSE Project No. 2180615.C

December 5, 2018

Arlington Conservation Commission 730 Mass Ave. Annex Arlington, MA 02476

Re: NOI Filing

Arlington Reservoir

Bathing Beach Improvements Walking Path Improvement Pilot Test

Dear Members of the Commission:

On behalf of the Town of Arlington Recreation Department, Weston & Sampson Engineers, Inc. is hereby enclosing nine (9) copies (including original), and one electronic copy on thumbdrive, of the Notice of Intent submittal (including plans) to fulfill the requirements of the Massachusetts Wetlands Protection Act, M.G.L. Chapter 131, Section 40 submittal requirements and the Town of Arlington submittal requirements. This submittal is a formal Notice of Intent for the bathing beach improvements and walking path improvement pilot test at Arlington Reservoir.

As part of the filing, we have attached the following:

Appendix A: Project Description
Appendix B: Stormwater Report
Appendix C: Project Maps

Appendix D: Contract Specifications

Appendix E: Abutters List / Notice to Abutters

Appendix F: Wetlands Memorandum

If you have any questions regarding this submittal, please contact me at (978) 532-1900.

Very truly yours,

**WESTON & SAMPSON** 

Mel Higgins, PWS

Mel Huges

Senior Environmental Scientist

#### APPENDIX 6

#### LEGAL NOTICE CHARGE AUTHORIZATION

DATE: 11/20/2010
TO: legals@wickedlocal.com
I hereby authorize Community Newspapers to bill me directly for the legal notice to
be published in the Arlington Advocate newspaper on 12/13/2018 for a public
hearing with the Arlington Conservation Commission to review a project at the following
location:Arlington Reservoir
Thank you. Signed:
Send bill to:
Jon Marshall  Arlington Recreation Department  422 Summer Street  Arlington, MA 02474 (Phone)
781-316-3880



# WPA Form 3 - Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

)	Provided by MassDEP:
	MassDEP File Number
	Document Transaction Number
	Arlington

City/Town

# Important:

When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.





Note: Before completing this form consult your local Conservation Commission regarding any municipal bylaw or ordinance.

# A. General Information

Arlington Reservo	ir - off Lowell St.	Arlington/Lexington			
a. Street Address		b. City/Town	c. Zip Code		
Latitude and Long	iitudo:	42deg 25' 47.12"N	71deg 11' 15.59"W		
_	illuue.	d. Latitude	e. Longitude		
61		1-4			
f. Assessors Map/Plat	Number	g. Parcel /Lot Number			
Applicant:					
Jon		Marshall			
a. First Name		b. Last Name			
	Recreation Department				
c. Organization					
422 Summer Stre	et				
		NA A	00474		
Arlington e. City/Town		MA f. State	02474 g. Zip Code		
			• •		
h. Phone Number i. Fax Number j. Email Address j. Email Address					
h. Phone Number	, <u> </u>				
Property owner (re	equired if different from	applicant):	than one owner		
	equired if different from	applicant): Check if more  b. Last Name	than one owner		
Property owner (re	equired if different from		than one owner		
Property owner (real a. First Name	equired if different from		than one owner		
a. First Name  c. Organization	equired if different from		g. Zip Code		
a. First Name c. Organization d. Street Address	equired if different from	b. Last Name			
a. First Name c. Organization d. Street Address e. City/Town	i. Fax Number	b. Last Name			
a. First Name c. Organization d. Street Address e. City/Town h. Phone Number	i. Fax Number	b. Last Name  f. State  j. Email address			
Property owner (real a. First Name  c. Organization  d. Street Address  e. City/Town  h. Phone Number  Representative (if	i. Fax Number	b. Last Name			
Property owner (real a. First Name  c. Organization  d. Street Address  e. City/Town  h. Phone Number  Representative (iff Mel	i. Fax Number any):	b. Last Name  f. State  j. Email address  Higgins			
e. City/Town h. Phone Number Representative (if Mel a. First Name	i. Fax Number any):	b. Last Name  f. State  j. Email address  Higgins			
a. First Name  c. Organization  d. Street Address  e. City/Town  h. Phone Number  Representative (if Mel a. First Name  Weston & Sampson C. Company  5 Centennial Drive	i. Fax Number any): on Engineers	b. Last Name  f. State  j. Email address  Higgins			
a. First Name c. Organization d. Street Address e. City/Town h. Phone Number Representative (if Mel a. First Name Weston & Sampse c. Company 5 Centennial Drive d. Street Address	i. Fax Number any): on Engineers	b. Last Name  f. State  j. Email address  Higgins b. Last Name	g. Zip Code		
a. First Name  c. Organization  d. Street Address  e. City/Town  h. Phone Number  Representative (if Mel a. First Name  Weston & Sampson c. Company  5 Centennial Driver d. Street Address  Peabody	i. Fax Number any): on Engineers	f. State  j. Email address  Higgins b. Last Name	g. Zip Code		
a. First Name c. Organization d. Street Address e. City/Town h. Phone Number Representative (if Mel a. First Name Weston & Sampso c. Company 5 Centennial Drive d. Street Address Peabody e. City/Town	i. Fax Number any): on Engineers	f. State  j. Email address  Higgins b. Last Name	g. Zip Code		
a. First Name  c. Organization  d. Street Address  e. City/Town  h. Phone Number  Representative (if Mel a. First Name  Weston & Sampson c. Company  5 Centennial Driver d. Street Address  Peabody	i. Fax Number any): on Engineers	f. State  j. Email address  Higgins b. Last Name	g. Zip Code		



# WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

rov	ided by MassDEP:
	MassDEP File Number
	Document Transaction Number
	A 11: 4
	Arlington
	City/Town

# A. General Information (continued)

	,					
6.	General Project Description:					
	Upgrade of the bathing beach filtration systems and pump hous improvement pilot study	lpgrade of the bathing beach filtration systems and pump house building and walking path nprovement pilot study				
7a.	7a. Project Type Checklist: (Limited Project Types see Section A.	7b.)				
	1. Single Family Home 2. Re	esidential Subdivision				
	3. Commercial/Industrial 4. Do	ock/Pier				
	5. Utilities 6. Co	pastal engineering Structure				
	7. Agriculture (e.g., cranberries, forestry) 8. Tr	ansportation				
	9. 🛛 Other					
7b.	7b. Is any portion of the proposed activity eligible to be treated as a					
	Restoration Limited Project) subject to 310 CMR 10.24 (coasta					
	1. Yes No 10.24 and 10.53 for a complete list and					
	2. Limited Project Type	Limited Project Type				
	If the proposed activity is eligible to be treated as an Ecological CMR10.24(8), 310 CMR 10.53(4)), complete and attach Appen Project Checklist and Signed Certification.					
8.	Property recorded at the Registry of Deeds for:					
	Middlesex South					
	a. County b. Certificate	# (if registered land)				
	c. Book d. Page Num	d. Page Number				
B.	3. Buffer Zone & Resource Area Impacts (temporary & permanent)					
1.						
<ul> <li>Vegetated Wetland, Inland Bank, or Coastal Resource Area.</li> <li>Inland Resource Areas (see 310 CMR 10.54-10.58; if not applicable, go to Section B.3, Coastal Resource Areas).</li> </ul>						
					Check all that apply below. Attach narrative and any supporting documentation describing ho project will meet all performance standards for each of the resource areas altered, including	

standards requiring consideration of alternative project design or location.

218 of 346

Page 2 of 9



# WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

rov	rided by MassDEP:
	MassDEP File Number
	Document Transaction Number
	Arlington
	City/Town

# B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

Resource Area Size of Proposed Alteration Proposed Replacement (if any) 87 87 а. 🖂 Bank 2. linear feet 1. linear feet b. 🗌 **Bordering Vegetated** Wetland 1. square feet 2. square feet 4196 4196 c. 🛛 Land Under 1. square feet 2. square feet Waterbodies and Waterways 3. cubic yards dredged Resource Area Size of Proposed Alteration Proposed Replacement (if any) d. 🖂 **Bordering Land** 2382 2382 1. square feet 2. square feet Subject to Flooding 3. cubic feet of flood storage lost 4. cubic feet replaced Isolated Land e. 1. square feet Subject to Flooding 2. cubic feet of flood storage lost 3. cubic feet replaced f. | | Riverfront Area 1. Name of Waterway (if available) - specify coastal or inland Width of Riverfront Area (check one): 25 ft. - Designated Densely Developed Areas only ☐ 100 ft. - New agricultural projects only 200 ft. - All other projects 3. Total area of Riverfront Area on the site of the proposed project: square feet 4. Proposed alteration of the Riverfront Area: a. total square feet b. square feet within 100 ft. c. square feet between 100 ft. and 200 ft. 5. Has an alternatives analysis been done and is it attached to this NOI? ☐ Yes ☐ No 6. Was the lot where the activity is proposed created prior to August 1, 1996? ☐ Yes ☐ No 3. Coastal Resource Areas: (See 310 CMR 10.25-10.35) Note: for coastal riverfront areas, please complete Section B.2.f. above.

For all projects affecting other Resource Areas, please attach a narrative explaining how the resource area was delineated.



# WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

rov	rided by MassDEP:
	MassDEP File Number
	Document Transaction Number
	Arlington City/Town

# B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

Check all that apply below. Attach narrative and supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

Online Users:
Include your
document
transaction
number
(provided on your
receipt page)
with all
supplementary
information you
submit to the
Department.

Resource Area		Size of Proposed Alter	ration	Proposed Replacement (if any)
а. 🗌	Designated Port Areas	Indicate size under Land Under the Ocean, below		
b. 🗌	Land Under the Ocean	1. square feet		
		2. cubic yards dredged		
с. 🗌	Barrier Beach	Indicate size under Co	astal Beacl	hes and/or Coastal Dunes below
d. 🗌	Coastal Beaches	1. square feet		2. cubic yards beach nourishment
е. 🗌	Coastal Dunes	1. square feet		2. cubic yards dune nourishment
		Size of Proposed Alter	ration_	Proposed Replacement (if any)
f g	Coastal Banks Rocky Intertidal	1. linear feet		
ş. <u> </u>	Shores	1. square feet		
h. 🗌	Salt Marshes	1. square feet		2. sq ft restoration, rehab., creation
i. 🗌	Land Under Salt Ponds	1. square feet		
		2. cubic yards dredged		
j. 🗌	Land Containing Shellfish	1. square feet		
k. 🗌	Fish Runs			s, inland Bank, Land Under the Waterbodies and Waterways,
		1. cubic yards dredged		
l. 🗌	Land Subject to Coastal Storm Flowage	1. square feet		
Restoration/Enhancement If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.2.b or B.3.h above, please enter the additional amount here.				
a. square feet of BVW		b. squ	uare feet of Sa	ılt Marsh
☐ Pro	oject Involves Stream Cross	sings		
a. number of new stream crossings		b. nur	mber of replac	ement stream crossings

4.

5.



# WPA Form 3 – Notice of Intent

Provi	ded by MassDEP:
-	MassDEP File Number
-	Document Transaction Number
	Arlington
	City/Town

N 4	A CONTRACTOR OF THE PROPERTY O	1 404 040	Document Hansaction Number			
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40			Arlington			
_		City/Town				
C.	C. Other Applicable Standards and Requirements					
	This is a proposal for an Ecological Restoration Limited Project. Skip Section C and complete Appendix A: Ecological Restoration Limited Project Checklists – Required Actions (310 CMR 10.11).					
Str	eamlined Massachusetts Endangered Spec	ies Act/Wetlands Pr	otection Act Review			
1.	Is any portion of the proposed project located in <b>Estimated Habitat of Rare Wildlife</b> as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program (NHESP)? To view habitat maps, see the <i>Massachusetts Natural Heritage Atlas</i> or go to <a href="http://maps.massgis.state.ma.us/PRI_EST_HAB/viewer.htm">http://maps.massgis.state.ma.us/PRI_EST_HAB/viewer.htm</a> .					
	a.  Yes No If yes, include proof of m	nailing or hand delive	y of NOI to:			
	Natural Heritage and Endangered Species Program Division of Fisheries and Wildlife 1 Rabbit Hill Road Westborough, MA 01581					
	If yes, the project is also subject to Massachusetts Endangered Species Act (MESA) review (321 CMR 10.18). To qualify for a streamlined, 30-day, MESA/Wetlands Protection Act review, please complete Section C.1.c, and include requested materials with this Notice of Intent (NOI); OR complete Section C.2.f, if applicable. If MESA supplemental information is not included with the NOI, by completing Section 1 of this form, the NHESP will require a separate MESA filing which may take up to 90 days to review (unless noted exceptions in Section 2 apply, see below).					
	c. Submit Supplemental Information for Endangere	ed Species Review*				
	Percentage/acreage of property to be a	altered:				
	(a) within wetland Resource Area	percentage/acreage				
	(b) outside Resource Area	percentage/acreage				
	2. Assessor's Map or right-of-way plan of	site				
2.	Project plans for entire project site, including w wetlands jurisdiction, showing existing and propose tree/vegetation clearing line, and clearly demarcate	ed conditions, existing a				
	(a) Project description (including description buffer zone)	on of impacts outside o	f wetland resource area &			
	(b) Photographs representative of the site					

<sup>\*</sup> Some projects not in Estimated Habitat may be located in Priority Habitat, and require NHESP review (see http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/regulatory-review/). Priority Habitat includes habitat for state-listed plants and strictly upland species not protected by the Wetlands Protection Act.

<sup>\*\*</sup> MESA projects may not be segmented (321 CMR 10.16). The applicant must disclose full development plans even if such plans are not required as part of the Notice of Intent process. 221 of 346 wpaform3.doc • rev. 2/8/2018 Page 5 of 9



# WPA Form 3 - Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
MassDEP File Number
Document Transaction Number
Arlington
City/Town

# C. Other Applicable Standards and Requirements (cont'd)

Make	(c) MESA filing fee (fee information available at <a href="http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/mesa_fee_schedule.htm">http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/mesa_fee_schedule.htm</a> ). Make check payable to "Commonwealth of Massachusetts - NHESP" and <i>mail to NHESP</i> at above address					
Project	Projects altering 10 or more acres of land, also submit:					
(d)	(d) Vegetation cover type map of site					
(e)	(e) Project plans showing Priority & Estimated Habitat boundaries					
(f) OF	R Check One of the Following					
1. 🗌	Project is exempt from MESA review.  Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14 <a href="http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/mesa_exemptions.htm">http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/mesa_exemptions.htm</a> the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)					
2. 🗌	Separate MESA review ongoing.	a. NHESP Tracking #	b. Date submitted to NHESP			
3.	3. Separate MESA review completed. Include copy of NHESP "no Take" determination or valid Conservation & Management Permit with approved plan.					
For coastal projects only, is any portion of the proposed project located below the mean high water line or in a fish run?						
a. Not applicable – project is in inland resource area only b. Yes No						
If yes, include proof of mailing, hand delivery, or electronic delivery of NOI to either:						
South Shore - Cohasset to Rhode Island border, and the Cape & Islands:						
Division of Marine Fisheries - Southeast Marine Fisheries Station Attn: Environmental Reviewer 836 South Rodney French Blvd. New Bedford, MA 02744 Email: DMF.EnvReview-South@state.ma.us  Division of Marine Fisheries - North Shore Office Attn: Environmental Reviewer 30 Emerson Avenue Gloucester, MA 01930 Email: DMF.EnvReview-North@state.ma.us						

Also if yes, the project may require a Chapter 91 license. For coastal towns in the Northeast Region, please contact MassDEP's Boston Office. For coastal towns in the Southeast Region, please contact MassDEP's Southeast Regional Office.

3.



# **Massachusetts Department of Environmental Protection** Bureau of Resource Protection - Wetlands

# WPA Form 3 - Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:			
MassDEP File Number			
Document Transaction Number			
Arlington			
City/Town			

# C. Other Applicable Standards and Requirements (cont'd)

	1	Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?
	4.	Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?
Online Users: Include your document		a.   Yes No  If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP Website for ACEC locations).   Note: electronic filers click on Website.
transaction number		b. ACEC
(provided on your receipt page) with all	5.	Is any portion of the proposed project within an area designated as an Outstanding Resource Water (ORW) as designated in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00?
supplementary		a. 🗌 Yes 🔯 No
information you submit to the Department.	6.	Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?
		a. 🗌 Yes 🔀 No
	7.	Is this project subject to provisions of the MassDEP Stormwater Management Standards?
		a. Xes. Attach a copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) and check if:
		<ol> <li>Applying for Low Impact Development (LID) site design credits (as described in Stormwater Management Handbook Vol. 2, Chapter 3)</li> </ol>
		2. A portion of the site constitutes redevelopment
		3. Proprietary BMPs are included in the Stormwater Management System.
		b. No. Check why the project is exempt:
		1. Single-family house
		2. Emergency road repair
		3. Small Residential Subdivision (less than or equal to 4 single-family houses or less than or equal to 4 units in multi-family housing project) with no discharge to Critical Areas.
	D.	Additional Information
		This is a proposal for an Ecological Restoration Limited Project. Skip Section D and complete Appendix A: Ecological Restoration Notice of Intent – Minimum Required Documents (310 CMR 10.12).
		Applicants must include the following with this Notice of Intent (NOI). See instructions for details.
		<b>Online Users:</b> Attach the document transaction number (provided on your receipt page) for any of the following information you submit to the Department.
		1. Subject to SGS or other map of the area (along with a narrative description, if necessary) containing sufficient information for the Conservation Commission and the Department to locate the site. (Electronic filers may omit this item.)

Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland [BVW] replication area or other mitigating measure) relative

to the boundaries of each affected resource area.

2.



# WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:		
MassDEP File Number		
Document Transaction Number		
Arlington		
City/Town		

# Additional Information (contid)

	3.	Identify the method for BVW and other res Field Data Form(s), Determination of Appl and attach documentation of the metho	cability, Order of Resource	•
	4. 🛛	List the titles and dates for all plans and of	her materials submitted with	n this NOI.
	lm	provements to the Arlington Reservoir		
		Plan Title		
		eston & Sampson	Cherilyn Ruane, PE	
		Prepared By /20/18	c. Signed and Stamped by 1" = 30'	
		Final Revision Date	e. Scale	
	f. A	dditional Plan or Document Title		g. Date
	5.	If there is more than one property owner, $\ensuremath{p}$ listed on this form.	blease attach a list of these	property owners not
	6.	Attach proof of mailing for Natural Heritage	e and Endangered Species	Program, if needed.
	7.	Attach proof of mailing for Massachusetts	Division of Marine Fisheries	, if needed.
	8. 🗌	Attach NOI Wetland Fee Transmittal Form		
	9. 🛛	Attach Stormwater Report, if needed.		
Ε.	Fees			
	1.	Fee Exempt: No filing fee shall be assessed of the Commonwealth, federally recognize authority, or the Massachusetts Bay Trans	d Indian tribe housing author	
		ants must submit the following information (i ansmittal Form) to confirm fee payment:	n addition to pages 1 and 2	of the NOI Wetland
	2. Munic	ipal Check Number	3. Check date	
	4. State	Check Number	5. Check date	
	6. Payor	name on check: First Name	7. Payor name on check: I	ast Name



# WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

ovided by Massi	)EP:
MassDEP File	Number
ering de sinche	
nja ning kasang katilah sakara di 1918 ta	insaction Number
Arlington	
City/Town	

# F. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made by Certificate of Mailing or in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

Jen Markan	12/4/2018
1. Signature of Applicant	2. Date
6, Signature of Property Owner (if different)	4. Date 14/18
5. Signature of Representative (if any)	6. Date

#### For Conservation Commission:

Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents, two copies of the NOI Wetland Fee Transmittal Form, and the city/town fee payment, to the Conservation Commission by certified mail or hand delivery.

#### For MassDEP:

One copy of the completed Notice of Intent (Form 3), including supporting plans and documents, one copy of the NOI Wetland Fee Transmittal Form, and a copy of the state fee payment to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery.

#### Other:

If the applicant has checked the "yes" box in any part of Section C, Item 3, above, refer to that section and the instructions for additional submittal requirements.

The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.

# Appendix A

#### PROJECT DESCRIPTION

## **Background**

Given that the mechanical equipment and Pump House Building were found to need immediate repair and/or replacement to ensure the continued operation of the bathing beach, these facilities have been identified as a critical need and is the focus of these improvements.

Additionally, the Town is proposing a pilot area of improvements to the reservoir's perimeter trail and shoreline. Improvements consist of repairing erosion control issues, removing invasive plant species, adding native species as needed, laying new permeable and accessible trail surfacing, ensuring positive drainage, and protection of existing tree roots.

## Site Description

Arlington Reservoir is located in the Arlington Heights neighborhood with Lowell Street forming its eastern edge. Although all of The Res and its shoreline are owned by the Town of Arlington, about half of the area is located in Lexington. It is approximately 65 acres in size, bordered on the north by Lexington Community Farm (Lex Farm), formerly called Busa Farm, Arlington's Hurd/Reservoir Field and the Drake Village Complex to the south, and Lexington's Rindge Park and residential Rindge Avenue to the west. The reservoir offers both passive and active recreational opportunities for both informal and formal use. It is used by community members and others year-round for walking, jogging, cross-country running and skiing, bird-watching, fishing, non-motorized boating, skating, dog walking and gardening. During the months of June, July and August, the Town operates a gated, chlorinated and filtered sandy bathing beach for resident and non-resident tag holders. The bathing beach area includes a bathhouse, concession stand, pump house with water filtration systems, picnic tables, benches and playground. Beyond the bathing beach area, there is a packed-dirt parking lot, forested area, a habitat garden, a reinforced dam with two outlets for flood mitigation, and a nearly one-mile trail path that encircles the water.

#### Scope of Work

Work proposed for this project at the Reservoir include two separate tasks, including:

- 1. Upgrades to the Bathing Beach filtration system and Pump House building
- 2. Piloting of improvements to the Res perimeter trail and shoreline

These tasks are described in further detail, below.

Task 1. Upgrades to the Bathing Beach filtration system and Pump House Building Upgrades to the Bathing Beach filtration system are comprehensive and will allow for future sustained operation of the Bathing Beach as a Town resource. Goals of the upgrades will be to 1) reduce the use of chlorine, 2) remove the backwash into the Res, and 3) improve public health by clarifying the water. In its current state, the filter backwashes into the Res; proposed alternations will divert water into the sewer. Improvements to the Pump House

building will be in support of these mechanical upgrades, bring the building itself into compliance with current code, and provide a few new amenities, principally an open air covering that will shelter staff while collecting tickets from beachgoers. Specific upgrades will include:

- New filtration
- Renovation of suction system and collector tank system
- New UV treatment system
- New inlet delivery system (using existing Reservoir water as a source)
- New skimming system
- New filter return system (inside the Reservoir).
- Building upgrades to improve operations and weather proofing.
  - New Roof, including steel framing and metal deck repair
  - New exterior double door and frame
  - Masonry cleaning and repointing (exterior)
  - o Concrete masonry repair and sealer (interior)
  - Outside Check In Area, which will be a post and beam with fixed awning overhang
  - o Painting of exterior CMU block walls
  - Landscape treatment along building face
  - o Add inside walls to reconfigure the space
  - New interior door and frame
  - o Interior wall and ceiling painting

The beach itself has a sand bottom and does not support any subsurface vegetation or organisms. For work within the bathing area (water within the bank), the water will be dropped to a level so that work can be done "in the dry". The lowering of water to this level within the bathing beach area is within normal operating level.

## Task 2: Piloting of Improvements to the Res Perimeter Trail and Shoreline

Management strategies to stabilize the walking trail, to mitigate bank erosion, and to remove invasive species will be incorporated along approximately 50 linear feet of pathway along the northern edge of the reservoir (in Lexington only). Each strategy is discussed in greater detail below:

#### Trail Stabilization

Within the pilot area along the northern edge of the reservoir, the pathway is dirt and well beaten by many years of foot traffic. Vegetation encroaches on the path's width in various locations and tree roots cover nearly the entire run of path, making the trail non-compliant by accessibility standards.

As part of these improvements, a typical 6-foot width to the trail will be established and a rubber-based flexible pavement will be installed. The rubber-based flexible pavement is very porous, made from recycled material, and has the ability to clean water as it passes through. It is slip-resistant and resistant to freeze-thaw due to its flexible nature, so its extreme durability is expected to withstand heavy trail use in the study area. The pathway will be constructed on top of the tree roots. A layer of geotextile fabric will be laid directly on

top of the tree roots. Sitting on top of the fabric will be 2-inches of rubber-based flexible paving material on top of 4-inches of crushed stone. The grades will be feathered back from the new elevation of the pathway.

## Removal of Invasive Species

Several different types of invasive species are present within the pilot area. Although other invasive species may be present on site, these eight species were observed in the largest abundance. These include:

- Alliara petiolate Garlic Mustard
- Berberis thunbergii Japanese Barberry
- Celastrus orbiculatus Asian Bittersweet
- Euonymus alatus Winged Euonymus
- Frangula alnus Glossy Buckthorn
- Lonicera morrowii Morrows Honeysuckle
- Lythrum salicaria Purple Loosestrife
- Polygonum cuspidatum Japanese Knotweed
- Rosa multifora Multiflora Rose

Invasive species within the work area will be managed and removed. Two methods will be tested within the pilot area: the Pulling or Digging method and Cut and Dab method. The Pull and Dig method will be used to remove large herbaceous and woody plant species, such as winged euonymus. It will be important to remove as much of the plant material as possible including the root mass, stolons, and rhizomes. Instead of using a shovel, digging with a fork or similar tool will be used. Shovels can often cut through a root, leaving a portion behind, where as a fork will tend to pull the entire root system. The cut and dab method essentially combines mechanical and chemical treatment together. A 25-35% concentration of the active ingredient will be used in the solution to achieve the desired results. Stems will be cut as close to the ground as possible and herbicide will be applied directly to the cut surface. The herbicide will be applied to a thoroughly wet, cut surface by either a spray bottle or a sponge, such that the herbicide gets into the plant.

## Biostabilization of Bank Erosion

Within the pilot area, the reservoir's bank is eroded in places due to heavy pathway use and foot traffic. Offering a moderate level of protection, a series of coconut fiber rolls (or coir fascines) will be installed parallel with the eroded bank. Rolls will be installed with hand driven wooden stakes. Flexible Growth Medium will be sprayed directly behind the rolls to help restore and stabilize the shoreline; the slope will then be replanted with native species. The rolls will be placed so that they are not overtopped during times of high water in the reservoir. Multiple rolls will be stacked to achieve the appropriate height based on normal water level data provided by the Town. The coconut fiber is a natural material that will eventually decompose and become part of the natural bank. As the vegetation planted behind and within the coconut fiber roll establishes, this area will become indistinguishable from its surrounding bank.

The following is a list of recommended native species that could be planted along the slope. They include:

### Trees

- Betula allegheniensis Yellow Birch
- Nyssa sylvatica Black Tupelo
- Quercus macrocarpa Bur Oak
- Quercus rubra Red Oak

### Shrubs

- Arctostaphylos uva-ursi Bearberry
- Cephalanthus occidentalis Buttonbush
- Rhus typhina Staghorn Sumac
- Vaccinium angustifolium Lowbush Blueberry
- Viburnum lentago Nannyberry
- Viburnum trilobum Highbush Cranberry

### Perennials/Ferns

- Eutrochium purpureum Joe-Pye Weed
- Iris versicolor Blue Flag Iris
- Matteuccia struthiopteris Ostrich Fern
- Osmundastrum cinnamomeum Cinnamon Fern
- Osmunda regalis Royal Fern
- Pontedaria cordata Pickerelweed

## **Environmental Considerations**

Project impacts are summarized in Table 1, below. Impacts by town are then detailed.

**Table 1. Project Impacts** 

Resource Type	Arlington Impacts	Lexington Impacts	Total Impacts
Bank (linear feet)	17	70	87
Land Under Water (square feet)	3,186	1,010	4,196
100-Year Flood Zone (square feet)	2,157	225	2,382

### Arlington

Environmental resources being impacted by work at the bathing beach area within Arlington include land under water, bank, and 100 year flood zone.

Land under water impacts will include temporary impacts associated with existing pipe removal and placement of new pipe below the ground. These temporary impacts are estimated to be 3,186 square feet in Arlington. Machinery used for this work will include an excavator. Upon completion of the project, land under water conditions will be the same as pre-construction conditions. As such, these are considered temporary in nature.

A small length of bank will be impacted along the beach associated with pipe trenching as it crosses the top of bank limit. This area of impact is within the beach area and will be temporary in nature. After the work is completed, the area will be returned to beach. The estimated length of bank impact in Arlington is 17 linear feet.

The area of work within the 100 year flood zone in Arlington is expected to be 2,157 square feet. This is work upgradient of the top of bank and below elevation 160 (the 100-year flood zone elevation). This work is associated with removing existing pipe and installation of new pipe. However, there will be no volume added within the flood zone. Upon project completion, site grades will be the same as pre-construction grades. As such, compensatory storage is not required for this project.

### Lexington

Environmental resources being impacted within Lexington include work at the bathing beach area and trail stabilization work. Impacted resource areas include: land under water, bank, and 100 year flood zone.

Land under water impacts will include temporary impacts associated with existing pipe removal and placement of new pipe below the ground. These temporary impacts are estimated to be 1,010 square feet in Lexington. Machinery used for this work will include an excavator. Upon completion of the project, land under water conditions will be the same as pre-construction conditions.

A small length of bank will be impacted along the beach associated with pipe installation (5 lf). Additionally, 65 lf of bank will be improved upon as part of the trail stabilization pilot test. Thus, a total of 70 lf of bank impacts will occur. Bank improvements will include a series of coconut fiber rolls (or coir fascines) being installed parallel with the eroded bank. Rolls will be installed with hand driven wooden stakes. Flexible Growth Medium will be sprayed directly behind the rolls to help restore and stabilize the shoreline; the slope will then be replanted with native species. Multiple rolls will be stacked to achieve the appropriate height based on normal water level data provided by the Town. As such, bank conditions are expected to improve as a result of this project.

The area of work within the 100 year flood zone is expected to be 225 square feet. This work is associated with removing existing pipe and installation of new pipe at the beach and trail stabilization work. However, there will be no volume added within the flood zone. Upon project completion, site grades will be the same as pre-construction grades. As such, compensatory storage is not required for this project.

Other environmental improvements to the reservoir will include the relocation of the backwash water from the filtration system. Currently, the backwash water outfalls into the reservoir. The proposed design will remove this outfall into the reservoir and put it into a storm drain.

\\wse03.local\\wSE\\Projects\\MA\\Arlington, MA\\Arlington Reservoir Master Plan Phase 1\\Permitting\\concom\\Joint appendices\\Appendix A - Project Description\\PROJECT DESCRIPTION.doc

# Appendix B



# **Massachusetts Department of Environmental Protection**

Bureau of Resource Protection - Wetlands Program

# **Checklist for Stormwater Report**

# A. Introduction

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.





A Stormwater Report must be submitted with the Notice of Intent permit application to document compliance with the Stormwater Management Standards. The following checklist is NOT a substitute for the Stormwater Report (which should provide more substantive and detailed information) but is offered here as a tool to help the applicant organize their Stormwater Management documentation for their Report and for the reviewer to assess this information in a consistent format. As noted in the Checklist, the Stormwater Report must contain the engineering computations and supporting information set forth in Volume 3 of the Massachusetts Stormwater Handbook. The Stormwater Report must be prepared and certified by a Registered Professional Engineer (RPE) licensed in the Commonwealth.

The Stormwater Report must include:

- The Stormwater Checklist completed and stamped by a Registered Professional Engineer (see page 2) that certifies that the Stormwater Report contains all required submittals. This Checklist is to be used as the cover for the completed Stormwater Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8<sup>2</sup>
- Operation and Maintenance Plan required by Standard 9

In addition to all plans and supporting information, the Stormwater Report must include a brief narrative describing stormwater management practices, including environmentally sensitive site design and LID techniques, along with a diagram depicting runoff through the proposed BMP treatment train. Plans are required to show existing and proposed conditions, identify all wetland resource areas, NRCS soil types, critical areas, Land Uses with Higher Potential Pollutant Loads (LUHPPL), and any areas on the site where infiltration rate is greater than 2.4 inches per hour. The Plans shall identify the drainage areas for both existing and proposed conditions at a scale that enables verification of supporting calculations.

As noted in the Checklist, the Stormwater Management Report shall document compliance with each of the Stormwater Management Standards as provided in the Massachusetts Stormwater Handbook. The soils evaluation and calculations shall be done using the methodologies set forth in Volume 3 of the Massachusetts Stormwater Handbook.

To ensure that the Stormwater Report is complete, applicants are required to fill in the Stormwater Report Checklist by checking the box to indicate that the specified information has been included in the Stormwater Report. If any of the information specified in the checklist has not been submitted, the applicant must provide an explanation. The completed Stormwater Report Checklist and Certification must be submitted with the Stormwater Report.

<sup>&</sup>lt;sup>1</sup> The Stormwater Report may also include the Illicit Discharge Compliance Statement required by Standard 10. If not included in the Stormwater Report, the Illicit Discharge Compliance Statement must be submitted prior to the discharge of stormwater runoff to the post-construction best management practices.

<sup>&</sup>lt;sup>2</sup> For some complex projects, it may not be possible to include the Construction Period Erosion and Sedimentation Control Plan in the Stormwater Report. In that event, the issuing authority has the discretion to issue an Order of Conditions that approves the project and includes a condition requiring the proponent to submit the Construction Period Erosion and Sedimentation Control Plan before commencing any land disturbance activity on the site.



# **Massachusetts Department of Environmental Protection**

Bureau of Resource Protection - Wetlands Program

# **Checklist for Stormwater Report**

# B. Stormwater Checklist and Certification

The following checklist is intended to serve as a guide for applicants as to the elements that ordinarily need to be addressed in a complete Stormwater Report. The checklist is also intended to provide conservation commissions and other reviewing authorities with a summary of the components necessary for a comprehensive Stormwater Report that addresses the ten Stormwater Standards.

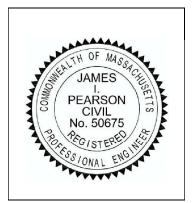
*Note:* Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the item is not applicable (N.A.) and provide the reasons for that determination.

A complete checklist must include the Certification set forth below signed by the Registered Professional Engineer who prepared the Stormwater Report.

# **Registered Professional Engineer's Certification**

I have reviewed the Stormwater Report, including the soil evaluation, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan (if included), the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement (if included) and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature



11/8/2018

# Checklist

<b>ject Type:</b> Is the application for new development, redevelopment, or a mix of new and evelopment?
New development
Redevelopment
Mix of New Development and Redevelopment

Signature and Date



# **Checklist for Stormwater Report**

# Checklist (continued)

env	<b>LID Measures:</b> Stormwater Standards require LID measures to be considered. Document what environmentally sensitive design and LID Techniques were considered during the planning and design of the project:			
	No disturbance to any Wetland Resource Areas			
	Site Design Practices (e.g. clustered development, reduced frontage setbacks)			
	Reduced Impervious Area (Redevelopment Only)			
	Minimizing disturbance to existing trees and shrubs			
	LID Site Design Credit Requested:			
	Credit 1			
	☐ Credit 2			
	☐ Credit 3			
	Use of "country drainage" versus curb and gutter conveyance and pipe			
	Bioretention Cells (includes Rain Gardens)			
	Constructed Stormwater Wetlands (includes Gravel Wetlands designs)			
	Treebox Filter			
	Water Quality Swale			
	Grass Channel			
	Green Roof			
	Other (describe):			
Sta	ndard 1: No New Untreated Discharges			
$\boxtimes$	No new untreated discharges			
	Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth			
	Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.			



# **Massachusetts Department of Environmental Protection**

Bureau of Resource Protection - Wetlands Program

# **Checklist for Stormwater Report**

Checklist (continued) Standard 2: Peak Rate Attenuation Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding. Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm. Calculations provided to show that post-development peak discharge rates do not exceed predevelopment rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24hour storm. Standard 3: Recharge Soil Analysis provided. Required Recharge Volume calculation provided. Required Recharge volume reduced through use of the LID site Design Credits. Sizing the infiltration, BMPs is based on the following method: Check the method used. ☐ Static Simple Dynamic Dynamic Field¹ Runoff from all impervious areas at the site discharging to the infiltration BMP. Runoff from all impervious areas at the site is *not* discharging to the infiltration BMP and calculations are provided showing that the drainage area contributing runoff to the infiltration BMPs is sufficient to generate the required recharge volume. Recharge BMPs have been sized to infiltrate the Required Recharge Volume. Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason: Site is comprised solely of C and D soils and/or bedrock at the land surface ☐ M.G.L. c. 21E sites pursuant to 310 CMR 40.0000 ☐ Solid Waste Landfill pursuant to 310 CMR 19.000 Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable. Calculations showing that the infiltration BMPs will drain in 72 hours are provided. Property includes a M.G.L. c. 21E site or a solid waste landfill and a mounding analysis is included.

<sup>&</sup>lt;sup>1</sup> 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.



# **Checklist for Stormwater Report**

Cł	necklist (continued)
Sta	ndard 3: Recharge (continued)
	The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.
	Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.
Sta	ndard 4: Water Quality
The	E Long-Term Pollution Prevention Plan typically includes the following: Good housekeeping practices; Provisions for storing materials and waste products inside or under cover; Vehicle washing controls; Requirements for routine inspections and maintenance of stormwater BMPs; Spill prevention and response plans; Provisions for maintenance of lawns, gardens, and other landscaped areas; Requirements for storage and use of fertilizers, herbicides, and pesticides; Pet waste management provisions; Provisions for operation and management of septic systems; Provisions for solid waste management; Snow disposal and plowing plans relative to Wetland Resource Areas; Winter Road Salt and/or Sand Use and Storage restrictions; Street sweeping schedules; Provisions for prevention of illicit discharges to the stormwater management system; Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL; Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan; List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.
	A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.  Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:  is within the Zone II or Interim Wellhead Protection Area  is near or to other critical areas  is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
	involves runoff from land uses with higher potential pollutant loads.
	The Required Water Quality Volume is reduced through use of the LID site Design Credits.

applicable, the 44% TSS removal pretreatment requirement, are provided.



# **Checklist for Stormwater Report**

Cł	necklist (continued)
Sta	ndard 4: Water Quality (continued)
	The BMP is sized (and calculations provided) based on:
	☐ The ½" or 1" Water Quality Volume or
	☐ The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.
	The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the propriety BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.
	A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.
Sta	ndard 5: Land Uses With Higher Potential Pollutant Loads (LUHPPLs)
	The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.  The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted <i>prior</i>
_	to the discharge of stormwater to the post-construction stormwater BMPs.
	The NPDES Multi-Sector General Permit does <i>not</i> cover the land use.
	LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.
	All exposure has been eliminated.
	All exposure has <i>not</i> been eliminated and all BMPs selected are on MassDEP LUHPPL list.
	The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.
Sta	ndard 6: Critical Areas
	The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.
	Critical areas and BMPs are identified in the Stormwater Report.



# **Massachusetts Department of Environmental Protection**

Bureau of Resource Protection - Wetlands Program

# **Checklist for Stormwater Report**

# Checklist (continued)

ent practicable
The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:
☐ Limited Project
<ul> <li>☐ Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.</li> <li>☐ Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area</li> </ul>
Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff
☐ Bike Path and/or Foot Path
Redevelopment Project
Redevelopment portion of mix of new and redevelopment.
Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.
The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-6 to the maximum extent practicable and (b) improves existing conditions.

## Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control

A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan must include the following information:

- Narrative;
- Construction Period Operation and Maintenance Plan;
- Names of Persons or Entity Responsible for Plan Compliance;
- Construction Period Pollution Prevention Measures:
- Erosion and Sedimentation Control Plan Drawings;
- Detail drawings and specifications for erosion control BMPs, including sizing calculations;
- Vegetation Planning;
- Site Development Plan;
- Construction Sequencing Plan;
- Sequencing of Erosion and Sedimentation Controls;
- Operation and Maintenance of Erosion and Sedimentation Controls;
- Inspection Schedule;
- Maintenance Schedule;
- Inspection and Maintenance Log Form.
- A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.



# **Checklist for Stormwater Report**

Checklist (continued)

	Indard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control ntinued)			
	The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has <i>not</i> been included in the Stormwater Report but will be submitted <i>before</i> land disturbance begins.			
	The project is <i>not</i> covered by a NPDES Construction General Permit.			
	The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in th Stormwater Report.			
The project is covered by a NPDES Construction General Permit but no SWPPP been submit The SWPPP will be submitted BEFORE land disturbance begins.				
Standard 9: Operation and Maintenance Plan				
	The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:			
	☐ Name of the stormwater management system owners;			
	☐ Party responsible for operation and maintenance;			
	☐ Schedule for implementation of routine and non-routine maintenance tasks;			
	☐ Plan showing the location of all stormwater BMPs maintenance access areas;			
	☐ Description and delineation of public safety features;			
	☐ Estimated operation and maintenance budget; and			
	☐ Operation and Maintenance Log Form.			
	The responsible party is <b>not</b> the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:			
	A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;			
	A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.			
Sta	andard 10: Prohibition of Illicit Discharges			
	The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;			
	An Illicit Discharge Compliance Statement is attached;			
	NO Illicit Discharge Compliance Statement is attached but will be submitted <i>prior to</i> the discharge any stormwater to post-construction BMPs.			

# Stormwater Report

To Be Submitted with the Notice of Intent

Applicant/Project Name: Arlington Recreation Department/Bathing Beach

Improvements and Walking Path Improvement Pilot Test

Project Address: Arlington Reservoir, Arlington/Lexington MA

Application Prepared by:

Firm: Weston & Sampson, Inc. Registered PE James Pearson, PE

Below is an explanation concerning Standards 1-10 as they apply to the Arlington Recreation Department Bathing Beach Improvements and Walking Path Improvement Pilot Test:

### General:

Arlington Reservoir is located in the Arlington Heights neighborhood with Lowell Street forming its eastern edge. Although all of The Res and its shoreline are owned by the Town of Arlington, about half of the area is located in Lexington. It is approximately 65 acres in size, bordered on the north by Lexington Community Farm (Lex Farm), formerly called Busa Farm, Arlington's Hurd/Reservoir Field and the Drake Village Complex to the south, and Lexington's Rindge Park and residential Rindge Avenue to the west. The reservoir offers both passive and active recreational opportunities for both informal and formal use. It is used by community members and others year-round for walking, jogging, cross-country running and skiing, bird-watching, fishing, non-motorized boating, skating, dog walking and gardening. During the months of June, July and August, the Town operates a gated, chlorinated and filtered sandy bathing beach for resident and non-resident tag holders. The bathing beach area includes a bathhouse, concession stand, pump house with water filtration systems, picnic tables, benches and playground. Beyond the bathing beach area, there is a packed-dirt parking lot, forested area, a habitat garden, a reinforced dam with two outlets for flood mitigation, and a nearly one-mile trail path that encircles the water.

Given that the mechanical equipment and Pump House Building were found to need immediate repair and/or replacement to ensure the continued operation of the bathing beach, these facilities have been identified as a critical need and is the focus of these improvements.

Additionally, the Town is proposing a pilot area of improvements to the reservoir's perimeter trail and shoreline. Improvements consist of repairing erosion control issues, removing invasive plant species, adding native species as needed, laying new permeable and accessible trail surfacing, ensuring positive drainage, and protection of existing tree roots.

# Standard 1: No New Untreated Discharges

The proposed project will create no new untreated discharges. Only a very small amount of impervious area will be added to the site. An existing 12'-0" x 16'-0" backwash pit structure adjacent to the existing pump building will be demolished. This existing impervious area will be replaced by a new impervious canopy roof structure in the same location. The new canopy structure will measure approximately 8'-0" x 30'-8". This will result in a negligible increase in impervious area of approximately 50 square feet.

### Standard 2: Peak Rate Attenuation

Since there will be only a very small increase in impervious area on the site, post-development (post-improvement) peak discharge rates will not substantially exceed pre-development (pre-improvement) peak discharge rates.

To ensure that the work incorporates the performance standards recommended in the DEP's Stormwater Management Policy, necessary erosion and sedimentation control measures will be utilized during construction. These measures will include erosion and sediment controls at the downgradient extent of limits of work as depicted on the site plans.

## Standard 3: Recharge

As noted in the **Standard 2** explanation, the increase to the impervious area in the work area will be negligible at the completion of the project. Therefore, recharge rates will not substantially change in the work area at the end of the project.

## Standard 4: Water Quality

The proposed work will not change water quality at the site. There will be no substantial increase in stormwater flow, and the design will not increase soil erosion. The slight increase in impervious area at the site will consist of the addition of a roof canopy structure. Runoff from roof structures is considered "clean" runoff for regulatory purposes, including metal roof structures where not located within a wellhead protection area or other critical area. This project is not within such areas. During the project, appropriate BMPs will be used to minimize sedimentation and soil erosion.

## Standard 5: Land Uses with Higher Potential Pollutant Loads (LUHPPLs)

Not Applicable. There are no LUHPPLs in the work area.

## Standard 6: Critical Areas

There will be no new discharge to critical areas.

# Standard 7: Redevelopments and Other Projects Subject to the Standards Only to the Maximum Extent Practicable

This is a re-development project.

# Standard 8: Construction Period Pollution Prevention and Erosion and Sediment Control

A detailed Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan is included. To ensure that the work incorporates the performance standards recommended in the DEP's Stormwater Management Policy, necessary erosion and sedimentation control measures will be utilized during construction. These measures will include coir logs as depicted on the site plans.

## Standard 9: Operation and Maintenance Plan

An operations and maintenance plan is not needed since there will not be any new stormwater management systems put in place in the project work area.

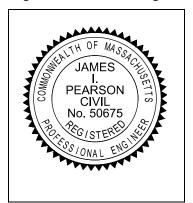
# Standard 10: Prohibition of Illicit Discharges

By the nature of the proposed work, there will be no illicit discharges. There will be no opportunity for illicit discharges into the system.

## Registered Professional Engineer's Certification

I have reviewed the Stormwater Report, including any relevant soil evaluations, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan, the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature



12/3/2018

Signature and Date

# Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan

## **SECTION 1: Introduction**

Given that the mechanical equipment and Pump House Building were found to need immediate repair and/or replacement to ensure the continued operation of the bathing beach, these facilities have been identified as a critical need and is the focus of these improvements.

Additionally, the Town is proposing a pilot area of improvements to the reservoir's perimeter trail and shoreline. Improvements consist of repairing erosion control issues, removing invasive plant species, adding native species as needed, laying new permeable and accessible trail surfacing, ensuring positive drainage, and protection of existing tree roots.

As part of this project, this "Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan" has been created to ensure that no further disturbance to the wetland resource is created during the project.

# SECTION 2: Construction Period Pollution Prevention Measures

Best Management Practices (BMPs) will be utilized as Construction Period Pollution Prevention Measures to reduce potential pollutants and prevent any off-site discharge. The objectives of the BMPs for construction activity are to minimize the disturbed areas, stabilize any disturbed areas, control the site perimeter and retain sediment. Both erosion and sedimentation controls and non-stormwater best management measures will be used to minimize site disturbance and ensure compliance with the performance standards of the WPA and Stormwater Standards. Measures will be taken to minimize the area disturbed by construction activities to reduce the potential for soil erosion and stormwater pollution problems. In addition, good housekeeping measures will be followed for the day-to-day operation of the construction site under the control of the contractor to minimize the impact of construction. This section describes the control practices that will be in place during construction activities. Recommended control practices will comply with the standards set in the MA DEP Stormwater Policy Handbook.

### 2.1 Minimize Disturbed Area and Protect Natural Features and Soil

In order to minimize disturbed areas, work will be completed within well-defined work limits. These work limits are shown on the construction plans. The Contractor shall not disturb native vegetation in the undisturbed wetland area without prior approval from the Engineer. The Contractor will be responsible to make sure that all of their workers and any subcontractors know the proper work limits and do not extend their work into the undisturbed areas. The protective measures are described in more detail in the following sections.

# 2.2 Control Stormwater Flowing onto and through the project

Construction areas adjacent to wetland resources will be lined with coir logs. The tubes will be inspected daily and accumulated silt will be removed as needed.

#### 2.3 Stabilize Soils

The Contractor shall limit the area of land which is exposed and free from vegetation during construction. In areas where the period of exposure will be greater than two (2) months, mulching, the use of erosion control mats, or other protective measures shall be provided as specified.

The Contractor shall take account of the conditions of the soil where erosion control seeding will take place to insure that materials used for re-vegetation are adaptive to the sediment control.

## 2.4 Proper Storage and Cover of Any Stockpiles

The location of the Contractor's storage areas for equipment and/or materials shall be upon cleared portions of the job site or areas to be cleared as a part of this project, and shall require written approval of the Engineer.

Adequate measures for erosion and sediment control such as the placement of coir logs around the downstream perimeter of stockpiles shall be employed to protect any downstream areas from siltation.

There shall be no storage of equipment or materials in areas designated as wetlands.

The Engineer may designate a particular area or areas where the Contractor may store materials used in his operations.

### 2.5 Perimeter Controls and Sediment Barriers

Erosion control lines as described in Section 5 will be utilized to ensure that sedimentation does not occur outside the perimeter of the work area.

### 2.6 Storm Drain Inlet Protection

There are no storm drains in the work area.

## 2.7 Retain Sediment On-Site

The Contractor will be responsible to monitor erosion control measures. Whenever necessary the Contractor will clear sediment from the coir log that have been silted up during construction. Daily monitoring should be conducted using the attached Monitoring Form.

The following good housekeeping practices will be followed on-site during the construction project:

## 2.8 Material Handling and Waste Management

Materials stored on-site will be stored in a neat, orderly manner in appropriate containers. Materials will be kept in their original containers with the original manufacturer's label. Substances will not be mixed with one another unless recommended by the manufacturer.

Waste materials will be collected and stored in a securely lidded metal container from a licensed management company. The waste and any construction debris from the site will be hauled off-site daily and disposed of properly. The contractor will be responsible for waste removal. Manufacturer's recommendations for proper use and disposal will be followed for materials. Sanitary waste will be collected from the portable units a minimum of once a week, by a licensed sanitary waste management contractor.

# 2.9 Designated Washout Areas

The Contractor shall use washout facilities at their own facilities, unless otherwise directed by the Engineer.

## 2.10 Proper Equipment/Vehicle Fueling and Maintenance Practices

On-site vehicles will be monitored for leaks and receive regular preventative maintenance to reduce the risk of leakage. To ensure that leaks on stored equipment do not contaminate the site, oil-absorbing mats will be placed under oil-containing equipment during storage. Regular fueling and service of the equipment may be performed using approved methods and with care taken to minimize chance of spills. Repair of equipment or machinery within the 100' water resources area shall not be allowed without the prior approval of the Engineer. Any petroleum products will be stored in tightly sealed containers that are clearly labeled with spill control pads/socks placed under/around their perimeters.

#### 2.11 Equipment/Vehicle Washing

The Contractor will be responsible to ensure that no equipment is washed on-site.

## SECTION 3: Spill Prevention and Control Plan

The Contractor will be responsible for preventing spills in accordance with the project specifications and applicable federal, state and local regulations. The Contractor will identify a properly trained site employee, involved with the day-to-day site operations to be the spill prevention and cleanup coordinator. The name(s) of the responsible spill personnel will be posted on-site. Each employee will be instructed that all spills are to be reported to the spill prevention and cleanup coordinator.

## 3.1 Spill Control Equipment

Spill control/containment equipment will be kept in the Work Area. Materials and equipment necessary for spill cleanup will be kept either in the Work Area or in an

otherwise accessible on-site location. Equipment and materials will include, but not be limited to, absorbent booms/mats, brooms, dust pans, mops, rags, gloves, goggles, sand, plastic and metal containers specifically for this purpose. It is the responsibility of the Contractor to ensure the inventory will be readily accessible and maintained.

#### 3.2 Notification

Workers will be directed to inform the on-site supervisor of a spill event. The supervisor will assess the incident and initiate proper containment and response procedures immediately upon notification. Workers should avoid direct contact with spilled materials during the containment procedures. Primary notification of a spill should be made to the local Fire Department and Police Departments. Secondary Notification will be to the certified cleanup contractor if deemed necessary by Fire and/or Police personnel. The third level of notification (within 1 hour) is to the DEP or municipality's Licensed Site Professional (LSP). The specific cleanup contractor to be used will be identified by the Contractor prior to commencement of construction activities.

# 3.3 Spill Containment and Clean-Up Measures

Spills will be contained with granular sorbent material, sand, sorbent pads, or all of the above to prevent spreading. Certified cleanup contractors should complete spill cleanup. The material manufacturer's recommended methods for spill cleanup will be clearly posted and on-site personnel will be made aware of the procedures and the location of the information and cleanup supplies.

#### 3.4 Hazardous Materials Spill Report

The Contractor will report and record any spill. The spill report will present a description of the release, including the quantity and type of material, date of the spill, circumstances leading to the release, location of spill, response actions and personnel, documentation of notifications and corrective measures implemented to prevent reoccurrence.

This document does not relieve the Contractor of the Federal reporting requirements of 40 CFR Part 110, 40 CFR Part 117, 40 CFR Part 302 and the State requirements specified under the Massachusetts Contingency Plan (M.C.P) relating to spills or other releases of oils or hazardous substances. Where a release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117 or 40 CFR Part 302, occurs during a twenty-four (24) hour period, the Contractor is required to comply with the response requirements of the above mentioned regulations. Spills of oil or hazardous material in excess of the reportable quantity will be reported to the National Response Center (NRC).

## SECTION 4: Contact Information/Responsible Parties

# Owner/Operator:

Town of Arlington Recreation Department Jon Marshall 422 Summer Street Arlington MA 02472 (781) 316-3880

### **Engineer:**

James Pearson, PE Weston & Sampson Engineers, Inc. 5 Centennial Drive Peabody, MA 01960 978-532-1900

## Site Inspector:

**TBD** 

#### Contractor:

TBD

## SECTION 5: Erosion and Sedimentation Control

Erosion and Sedimentation Control Drawings can be found in the attached project plans. In addition a technical specification (*Section 01570 Wetlands Protection and Erosion Control*) has been included as part of Appendix D, which details all Erosion and Sedimentation controls.

## SECTION 6: Site Development Plan

The Site Development Plan is included in the attached plans.

## SECTION 7: Operation and Maintenance of Erosion Control

The erosion control measures will be installed as detailed in the technical specification *01570 Environmental Protection*. If there is a failure to the controls the Contractor, under the supervision of the Engineer, will be required to stop work until the failure is repaired.

Periodically throughout the work, whenever the Engineer deems it necessary, the sediment that has been deposited against the controls will be removed to ensure that the controls are working properly.

## SECTION 8: Inspection Schedule

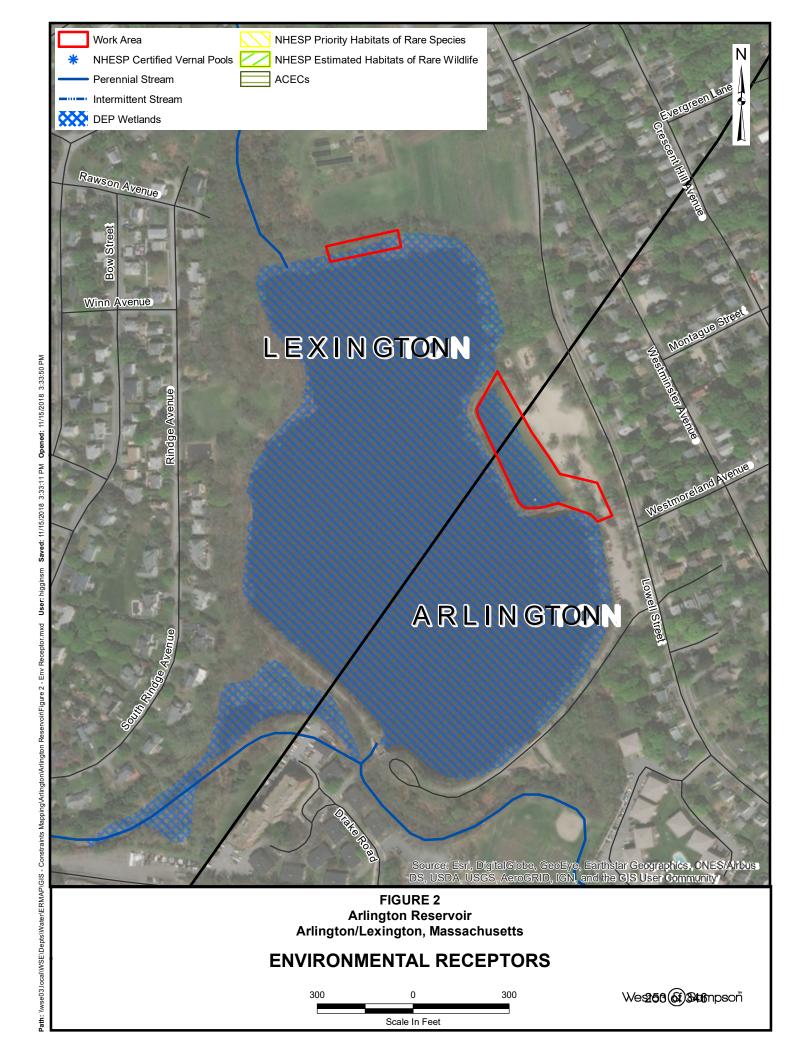
During construction, the erosion and sedimentation controls will be inspected daily. Once the Contractor is selected, an on site inspector will be selected to work closely with the Engineer to insure that erosion and sedimentation controls are in place and working properly. An Inspection Form is included.

# **Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan**

Arlington Reservoir – Bathing Beach Improvements and Walking Path Improvement Pilot Test

Inspected	By:		Date: Time:
		DOES NOT	
YES	NO	APPLY	ITEM
			Do any erosion/siltation control measures require repair or clean out to maintain adequate function?
			Is there any evidence that sediment is leaving the site and entering the wetlands?
			Are any temporary soil stockpiles or construction materials located in non-approved areas?
			Are on-site construction traffic routes, parking, and storage of equipment and supplies located in areas not specifically designed for them?
Other Cor	nments:		
•			I certify that the site is in compliance with the on and Erosion and Sedimentation Control Plan.
Signature			Date:

# Appendix C

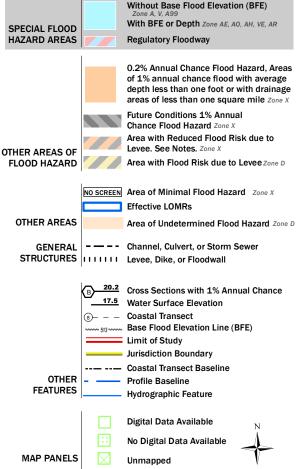


# National Flood Hazard Layer FIRMette



#### Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

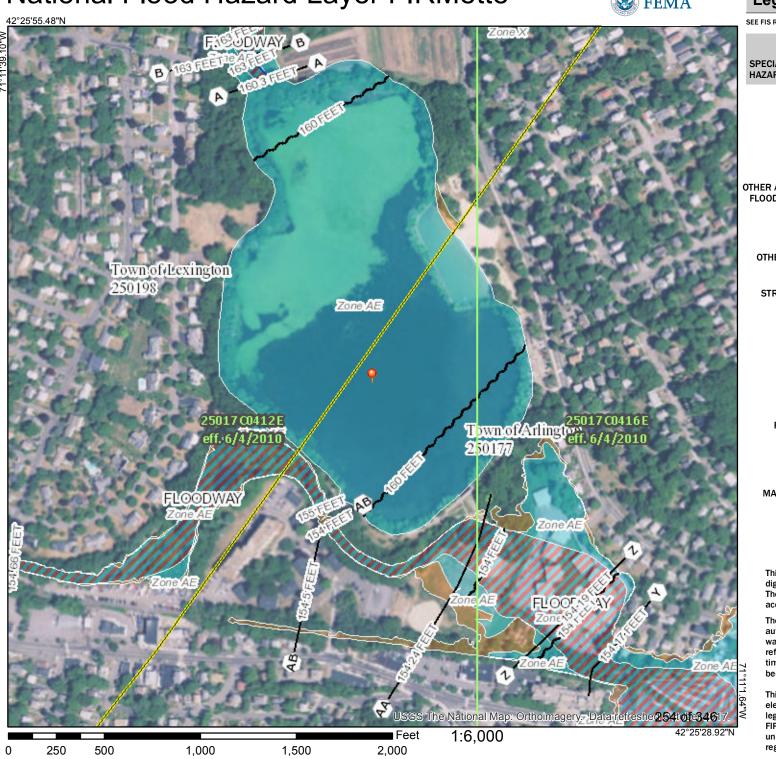


The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 10/18/2018 at 12:14:15 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



## Appendix D

#### SECTION 01562

#### **DUST CONTROL**

#### PART 1 - GENERAL

#### 1.01 DESCRIPTION:

This section of the specification covers the control of dust via water.

#### PART 2 - PRODUCTS

#### 2.01 WATER:

A. Water shall not be brackish and shall be free from oil, acid, and injurious alkali or vegetable matter.

#### PART 3 - EXECUTION

#### 3.01 APPLICATION:

- A. Water may be sprinkler applied with equipment including a tank with gauge-equipped pressure pump and a nozzle-equipped spray bar.
- B. Water shall be dispersed through the nozzle under a minimum pressure of 20 pounds per square inch, gauge pressure.

**END OF SECTION** 

\\wse03.local\\WSE\\Projects\\MA\\Arlington, MA\\Arlington Reservoir Master Plan Phase 1\\Permitting\\concom\\Joint appendices\\Appendix D Specs\\SECTION 01562-Dust Control.docx

07/12/2012 01562-1

#### SECTION 01570

#### **ENVIRONMENTAL PROTECTION**

#### PART 1 – GENERAL

#### 1.01 DESCRIPTION:

- A. The work covered by this section of the specifications consists of furnishing all labor, materials, tools and equipment and performing all work required for the prevention of environmental pollution during and as a result of construction operations under this contract.
- B. The requirements set forth in this section of the specifications apply to construction adjacent to wetlands, unless otherwise specifically stated.
- C. All work under this Contract shall be in accordance with the Conservation Commissions' Orders of Conditions as well as any conditional requirements applied.
- D. Prior to commencement of work, the Contractor shall meet with representatives of the Engineer to develop mutual understandings relative to compliance of the environmental protection program.

#### 1.02 SUBMITTALS:

A. The Contractor shall submit for approval six sets of details and literature fully describing environmental protection methods to be employed in carrying out construction activities within 100 feet of wetlands or across areas designated as wetlands.

#### PART 2 - PRODUCTS

#### 2.01 COMPOST FILTER TUBES:

A. Silt socks shall be a tubular filter sock of mesh fabric. The fabric will have openings of between 1/8" to 1/4" diameter. The mesh material will either photo degrade within one year or be made of nylon with a life expectancy of 24 months. The sock shall be filled with a mix of composted leaf mulch, bark mulch and wood chips that have been composted for at least one year. The sock will have a minimum diameter of 12-inches.

#### PART 3- EXECUTION

#### 3.01 NOTIFICATION AND STOPPAGE OF WORK:

A. The Engineer will notify the Contractor in writing of any non-compliance with the provisions of the Order of Conditions. The Contractor shall, after receipt of such notice, immediately take corrective action. Such notice, when delivered to the Contractor or his authorized representative at the site of the work, shall be deemed sufficient for the purpose. If the Contractor fails to act promptly, the Owner may order stoppage of all or part of the work through the Engineer until satisfactory corrective action has been taken.

No claim for an extension of time or for excess costs or damage incurred by the Contractor as a result of time lost due to any stop work orders shall be made unless it was later determined that the Contractor was in compliance.

#### 3.02 AREA OF CONSTRUCTION ACTIVITY:

A. Insofar as possible, the Contractor shall confine his construction activities to those areas defined by the plans and specifications. All land resources within the project boundaries and outside the limits of permanent work performed under this contract shall be preserved in their present condition or be restored to a condition after completion of construction at least equal to that which existed prior to work under this contract.

#### 3.03 PROTECTION OF WATER RESOURCES:

- A. The Contractor shall not pollute streams, lakes or reservoirs with fuels, oils, bitumens, calcium chloride, acids or other harmful materials. It is the Contractor's responsibility to comply with all applicable Federal, State, County and Municipal laws regarding pollution of rivers and streams.
- B. Special measures should be taken to insure against spillage of any pollutants into public waters.

#### 3.04 CONSTRUCTION IN AREAS DESIGNATED AS BUFFER ZONE ON THE DRAWINGS:

- A. Insofar as possible, the Contractor shall make every effort to minimize disturbance within 100-feet of wetland resource areas.
- B. The Contractor shall perform his work in such a way that these areas are left in the condition existing prior to construction.

#### 3.05 PROTECTING AND MINIMIZING EXPOSED AREAS:

- A. The Contractor shall limit the area of land which is exposed and free from vegetation during construction. In areas where the period of exposure will be greater than two (2) months, temporary vegetation, mulching or other protective measures shall be provided as specified.
- B. The Contractor shall take account of the conditions of the soil where temporary cover crop will be used to insure that materials used for temporary vegetation are adaptive to the sediment control. Materials to be used for temporary vegetation shall be approved by the Engineer.

#### 3.06 LOCATION OF STORAGE AREAS:

A. The location of the Contractor's storage areas for equipment and/or materials shall be upon cleared portions of the job site or areas to be cleared as a part of this project, and shall require written approval of the Engineer. Plans showing storage facilities for equipment and materials shall be submitted for approval of the Engineer.

- B. No excavated materials or materials used in backfill operations shall be deposited within a minimum distance of one hundred (100) feet of any watercourse or any drainage facility. Adequate measures for erosion and sediment control such as the placement of compost filter tubes around the downstream perimeter of stockpiles shall be employed to protect any downstream areas from siltation.
- C. There shall be no storage of equipment or materials in areas designated as wetlands.
- D. The Engineer may designate a particular area or areas where the Contractor may store materials used in his operations.

#### 3.07 CLEARING AND GRUBBING:

A. The Contractor shall clear and grub only on the Owner's land, and only the area required for construction operations, as approved by the Engineer.

#### 3.08 DUST CONTROL:

- A. During the progress of the work, the Contractor shall conduct his operations and maintain the area of his activities, including sweeping and sprinkling of streets as necessary, to minimize creation and dispersion of dust. If the Engineer decides it is necessary to use calcium chloride for more effective dust control, the Contractor shall furnish and spread the material, as directed.
- B. Calcium Chloride shall not be used for dust control within a drainage basin or in the vicinity of any source of potable water.

#### 3.09 COMPOST FILTER TUBES:

A. The compost filter tubes will be staked in the ground using wooden stakes driven at 4-foot intervals. The wooden stakes will be placed at a minimum depth of 24-inches into the ground.

#### END OF SECTION

\\wse03.local\WSE\Projects\MA\Arlington, MA\Arlington Reservoir Master Plan Phase 1\Permitting\concom\Joint appendices\Appendix D Specs\SECTION 01570-Environmental Protection.docx

#### **SECTION 01740**

#### **CLEANING UP**

#### PART 1 - GENERAL

#### 1.01 DESCRIPTION:

The Contractor must employ at all times during the progress of its work adequate cleanup measures and safety precautions to prevent injuries to persons or damage to property. The Contractor shall immediately, upon request by the Engineer provide adequate material, equipment and labor to cleanup and make safe any and all areas deemed necessary by the Engineer.

#### PART 2 - PRODUCTS

Not applicable

#### PART 3 - EXECUTION

#### 3.01 DAILY CLEANUP:

- A. The Contractor shall clean up, at least daily, all refuse, rubbish, scrap and surplus material, debris and unneeded construction equipment resulting from the construction operations and sweep the area. The site of the work and the adjacent areas affected thereby shall at all times present a neat, orderly and workmanlike appearance.
- B. Upon written notification by the Engineer, the Contractor shall within 24 hours clean up those areas, which in the Engineer's opinion are in violation of this section and the above referenced sections of the specifications.
- C. If in the opinion of the Engineer, the referenced areas are not satisfactorily cleaned up, all other work on the project shall stop until the cleanup is satisfactory.

#### 3.02 MATERIAL OR DEBRIS IN DRAINAGE FACILITIES:

A. Where material or debris has washed or flowed into or has been placed in existing watercourses, ditches, gutters, drains, pipes, structures, such material or debris shall be entirely removed and satisfactorily disposed of during progress of the work, and the

01/24/2018 01740-1

ditches, channels, drains, pipes, structures, and work shall, upon completion of the work, be left in a clean and neat condition.

#### 3.03 REMOVAL OF TEMPORARY BUILDINGS, STRUCTURES AND EQUIPMENT:

A. On or before completion of the work, the Contractor shall, unless otherwise specifically required or permitted in writing, tear down and remove all temporary buildings and structures it built; shall remove all temporary works, tools and machinery or other construction equipment it furnished; shall remove all rubbish from any grounds which it has occupied; shall remove silt fences and hay bales used for trapping sediment; and shall leave the roads and all parts of the property and adjacent property affected by its operations in a neat and satisfactory condition.

#### 3.04 RESTORATION OF DAMAGED PROPERTY:

A. The Contractor shall restore or replace, when and as required, any property damaged by its work, equipment or employees, to a condition at least equal to that existing immediately prior to the beginning of operations. To this end the Contractor shall do as required all necessary highway or driveway, walk and landscaping work. Materials, equipment, and methods for such restoration shall be as approved by the Engineer.

#### 3.05 FINAL CLEANUP:

A. Before acceptance by the Owner, the Contractor shall perform a final cleanup to bring the construction site to its original or specified condition. This cleanup shall include removing all trash and debris off of the premises. Before acceptance, the Engineer shall approve the condition of the site.

#### END OF SECTION

\\Wse03.local\WSE\Projects\MA\Arlington, MA\Arlington Reservoir Master Plan Phase 1\Permitting\concom\Joint appendices\Appendix D Specs\SECTION 01740-Cleaning Up.docx

# Appendix E

#### **APPENDIX 4**

#### ABUTTER NOTIFICATION MODEL

#### Notification to Abutters Under the Massachusetts Wetlands Protection Act And Arlington Wetlands Protection Bylaw

In accordance with the second paragraph of Massachusetts General Laws Chapter 131, Section 40, and the Arlington Wetlands Protection Bylaw, you are hereby notified of the following:

The Conservation Commission will hold a public hearing in the second floor conference room of the Town Hall Annex, 730
Massachusetts Avenue, Arlington, on Thursday, December 20, 2018 at 7:30pm in accordance with the provisions of the Mass
Wetlands Protection Act (M.G.L. Ch. 131, s. 40, as amended) and the Town of Arlington Bylaws Article 8, Bylaw for Wetland Protection, for a Notice of Intent or Request for Determination of Applicability) from Town of Arlington Act (M.G.L. Ch. 131, s. 40, as amended) and the Town of Arlington Bylaws Article 8, Bylaw for Wetland at Town of Arlington Bylaws Article 8, Bylaw for Wetland at Town of Arlington Bylaws Article 8, Bylaw for Wetland Protection, for a Notice of Intent or Request for Determination of Applicability) from Town of Arlington Bylaws Article 8, Bylaw for Wetland at Town of Arlington Bylaws Article 8, Bylaw for Wetland Protection, for a Notice of Intent or Request for Determination of Applicability) from Town of Arlington Bylaws Article 8, Bylaw for Wetland Bylaws Article 8, Bylaw for Wetland Protection, for a Notice of Intent or Request for Determination of Applicability) from Town of Arlington Bylaws Article 8, Bylaw for Wetland Bylaws
Arlington Reservoir , within $\underline{100}$ feet of a wetland , on Assessor's Property Map/s $\#\underline{61}$ , Lot/s $\#\underline{1-4}$ .
A copy of the application and accompanying plans are available for inspection Mon Thurs. 8am-4pm and Fri. 8am-noon at
the Conservation Commission office, first floor of the Town Hall Annex, 730 Massachusetts Avenue, Arlington, MA 02476.
For more information call the applicant at x2332 or the Arlington Conservation Commission at 781-316-3012, or the DEP Northeast Regional Office at 978-694-3200.
NOTE: Notice of the Public Hearing will be published at least five (5) business days in advance in <i>The Arlington Advocate</i> and will also be posted at least 48 hours in advance in the Arlington Town Hall.
**************************************
The meeting information for your hearing is:
Date: Thursday, December 20, 2018
Time: 7:30pm

Revised 1/9/2018 Page 8

#### **APPENDIX 5**

#### AFFIDAVIT OF SERVICE

(Return to Conservation Commission)

I, Mel Higgins , being duly sworn, do hereby state as follows: on 12/5/2018 , I mailed a "Notification to Abutters" in compliance with the second paragraph of Massachusetts General Laws, Chapter 131, s.40, the DEP Guide to Abutter Notification dated April 8, 1994, and the Arlington Wetlands Protection Bylaw, Title V, Article 8 of the Town of Arlington Bylaws in connection with the following matter:

Arlington Reservoir bathing beach improvements

The form of the notification, and a list of the abutters to whom it was provided and their addresses, are attached to this Affidavit of Service.

Signed under the pains and penalties of perjury, this 5th day of December

Name



Office of the Board of Assessors Robbins Memorial Town Hall Arlington, MA 02476 (781) 316-3050 Assessors@town.arlington.ma.us

**Abutters List** 

Date: October 19, 2018

Subject Property Address: 0-LOT LOWELL ST Arlington, MA

Subject Property ID: 61-1-4

Search Distance: 100 Feet

I hereby certify that this list has been prepared in accordance with Chapter 40A, Section 11 of Massachusetts General Law and Town of Arlington By-Laws.

Board of Assessors

Prop ID: 61-1-3

Prop Location: 0-LOT MASS AVE Arlington, MA

Owner: TOWN OF ARLINGTON PARK

Co-Owner: Mailing Address: 730 MASS AVE

ARLINGTON, MA 02476

-----

Prop ID: 61-1-4

Prop Location: 0-LOT LOWELL ST Arlington, MA

Owner: TOWN OF ARLINGTON PARK

Co-Owner: Mailing Address: 730 MASS AVE

ARLINGTON, MA 02476

-----

Prop ID: 61-1-5

Prop Location: 202 LOWELL ST Arlington, MA Owner: YOUNG DOUGLAS W & CATHRINE K

Co-Owner: Mailing Address: 202 LOWELL STREET ARLINGTON, MA 02474

-----

Prop ID: 61-1-6

Prop Location: 198 LOWELL ST Arlington, MA

Owner: SCHWARTZ ELIZABETH

Co-Owner: Mailing Address: 198 LOWELL ST

ARLINGTON, MA 02474

-----

Prop ID: 61-1-7

Prop Location: 194 LOWELL ST Arlington, MA

Owner: BULL PETER
Co-Owner: DOIDGE THEA
Mailing Address:

194 LOWELL STREET ARLINGTON, MA 02474

-----

Prop ID: 61.A-10-1

Prop Location: 10 COLONIAL VILLAGE DR UNIT JI

Owner: VALLE ALISON Y

Co-Owner: Mailing Address:

10 COLONIAL VILLAGE DR #1 ARLINGTON, MA 02474

-----

Prop ID: 61.A-10-10

Prop Location: 10 COLONIAL VILLAGE DR UNIT J10

Owner: SULLIVAN ROSEMARY T

Co-Owner: Mailing Address:

10 COLONIAL VILLAGE DR #10

ARLINGTON, MA 02474

-----

Prop ID: 61.A-10-11

Prop Location: 10 COLONIAL VILLAGE DR UNIT J11

Owner: GILLIGAN BARBARA Y

Co-Owner: Mailing Address:

10 COLONIAL VILLAGE DR #11

ARLINGTON, MA 02474

Prop ID: 61.A-10-12

Prop Location: 10 COLONIAL VILLAGE DR UNIT J12

Owner: BRASIL DEASSIS MORAES GUSTAVO

Co-Owner: SOARES CRISTIANE

Mailing Address:

10 COLONIAL VILLAGE DR #12

ARLINGTON, MA 02474

\_\_\_\_\_

Prop ID: 61.A-10-2

Prop Location: 10 COLONIAL VILLAGE DR UNIT J2

Owner: IORDANIDIS ATHINA

Co-Owner: Mailing Address:

10 COLONIAL VILLAGE DR #2 ARLINGTON, MA 02474

\_\_\_\_\_

Prop ID: 61.A-10-3

Prop Location: 10 COLONIAL VILLAGE DR UNIT J3

Owner: ROGERS BRUCE LEE

Co-Owner: LI JINYU Mailing Address: 107 PINE ST

WOBURN, MA 01801-3373

-----

Prop ID: 61.A-10-4

Prop Location: 10 COLONIAL VILLAGE DR UNIT J4

Owner: VAN RHEENEN CONNIE

Co-Owner: Mailing Address:

38 BRADBURY STREET CAMBRIDGE, MA 02138

-----

Prop ID: 61.A-10-5

Prop Location: 10 COLONIAL VILLAGE DR UNIT J5

Owner: ABUGOV GREGORY & VICTORIA

Co-Owner: Mailing Address: 16 ENDICOTT PL CANTON, MA 02021

.....

Prop ID: 61.A-10-6

Prop Location: 10 COLONIAL VILLAGE DR UNIT J6

Owner: PINE DANIEL R

Co-Owner: Mailing Address: 51 STOWCROFT RD ARLINGTON, MA 02474

-----

266 of 346

Prop ID: 61.A-10-7

Prop Location: 10 COLONIAL VILLAGE DR UNIT J7

Owner: HAN XIAOGANG & Co-Owner: DONG JENNIFER

Mailing Address:

10 COLONIAL VILLAGE DR #7 ARLINGTON, MA 02474

-----

Prop ID: 61.A-10-8

Prop Location: 10 COLONIAL VILLAGE DR UNIT J8

Owner: LIN ZHOUFANG

Co-Owner: Mailing Address:

10 COLONIAL VILLAGE DR #8 ARLINGTON, MA 02474

-----

Prop ID: 61.A-10-9

Prop Location: 10 COLONIAL VILLAGE DR UNIT J9

Owner: CHAN MARY KAR-MI

Co-Owner: Mailing Address:

10 COLONIAL VILLAGE DR #9 ARLINGTON, MA 02474

-----

Prop ID: 61.A-1-1

Prop Location: 1 COLONIAL VILLAGE DR UNIT A1

Owner: BAGWADIA ZUBIN ETAL TR Co-Owner: HOPE CYRUS BAGWADIA

Mailing Address: 87 OAK RIDGE TER LYNNFIELD, MA 01940

-----

Prop ID: 61.A-1-10

Prop Location: 1 COLONIAL VILLAGE DR UNIT A10

Owner: ZHOU XIAOXIONG Co-Owner: A/K/A ZHOU FLORA

Mailing Address:

1 COLONIAL VILLAGE DR #10 ARLINGTON, MA 02474

\_\_\_\_\_

Prop ID: 61.A-1-11

Prop Location: 1 COLONIAL VILLAGE DR UNIT A11

Owner: BARRY ELLEN J

Co-Owner: Mailing Address:

1 COLONIAL VILLAGE DR #11 ARLINGTON, MA 02474

-----

Prop ID: 61.A-11-1

Prop Location: 11 COLONIAL VILLAGE DR UNIT K1

Owner: LOPEZ DAVID

Co-Owner: QUIROS LOURDES

Mailing Address: 146 OAKLAND ST MALDEN, MA 02148

\_\_\_\_\_

Prop ID: 61.A-11-10

Prop Location: 11 COLONIAL VILLAGE DR UNIT K10

Owner: LOPEZ DAVID F

Co-Owner: Mailing Address: 146 OAKLAND ST MALDEN, MA 02148

\_\_\_\_\_

Prop ID: 61.A-11-11

Prop Location: 11 COLONIAL VILLAGE DR UNIT K11

Owner: HIGGINS JAMES F

Co-Owner: Mailing Address:

4836 COMANCHE TRAIL PRESCOTT, AZ 86301

-----

Prop ID: 61.A-11-12

Prop Location: 11 COLONIAL VILLAGE DR UNIT K12

Owner: WALKER KATHRYN R

Co-Owner: Mailing Address:

11 COLONIAL VILLAGE DR #12 ARLINGTON, MA 02474

-----

Prop ID: 61.A-1-12

Prop Location: 1 COLONIAL VILLAGE DR UNIT A12

Owner: MA ZHOUYANG

Co-Owner: Mailing Address:

1 COLONIAL VILLAGE DR #12 ARLINGTON, MA 02474

-----

Prop ID: 61.A-11-2

Prop Location: 11 COLONIAL VILLAGE DR UNIT K2

Owner: TIERNEY LAURA J TRUSTEE

Co-Owner: PIANTES SOUTH MIDDLESEX COUNTY

Mailing Address:

216 RANGEWAY RD UNIT 142 NORTH BILLERICA, MA 01862

-----

Prop ID: 61.A-11-3

Prop Location: 11 COLONIAL VILLAGE DR UNIT K3

Owner: DIMILLA JULIE ELIZABETH

-----

Co-Owner: Mailing Address:

11 COLONIAL VILLAGE DR #3

ARLINGTON, MA 02474

Prop ID: 61.A-11-4

Prop Location: 11 COLONIAL VILLAGE DR UNIT K4

Owner: TU WENHONG

Co-Owner: Mailing Address: 26 SADDLE CLUB RD LEXINGTON, MA 02420

\_\_\_\_\_

Prop ID: 61.A-11-5

Prop Location: 11 COLONIAL VILLAGE DR UNIT K5

Owner: LOPEZ DAVID F

Co-Owner: Mailing Address: 146 OAKLAND ST MALDEN, MA 02148

-----

Prop ID: 61.A-11-6

Prop Location: 11 COLONIAL VILLAGE DR UNIT K6

Owner: VAN MOORTEL MARJORIE

Co-Owner: Mailing Address:

11 COLONIAL VILLAGE DR #6 ARLINGTON, MA 02474

-----

Prop ID: 61.A-11-7

Prop Location: 11 COLONIAL VILLAGE DR UNIT K7

Owner: FULLUM JOSEPH F

Co-Owner: Mailing Address:

11 COLONIAL VILLAGE DR #7 ARLINGTON, MA 02474

-----

Prop ID: 61.A-11-8

Prop Location: 11 COLONIAL VILLAGE DR UNIT K8

Owner: BURKE CHARLES TR

Co-Owner: C/O HILARIE CHANDLER MGMT

Mailing Address: 19 DOONAN STREET TR OF S.R. REALTY TRUST MEDFORD, MA 02155

-----

Prop ID: 61.A-11-9

Prop Location: 11 COLONIAL VILLAGE DR UNIT K9

Owner: VEZNAIAN MARY

Co-Owner: Mailing Address:

11 COLONIAL VILLAGE DR #9 ARLINGTON, MA 02474

-----

Prop ID: 61.A-1-2

Prop Location: 1 COLONIAL VILLAGE DR UNIT A2

Owner: HERZBERG LORRIE

Co-Owner: Mailing Address:

1 COLONIAL VILLAGE DR #2 ARLINGTON, MA 02474

-----

Prop ID: 61.A-12-1

Prop Location: 12 COLONIAL VILLAGE DR UNIT L1

Owner: SONAM TENZIN

Co-Owner: Mailing Address: 4 BRIDLE PATH SUDBURY, MA 01776

-----

Prop ID: 61.A-12-10

Prop Location: 12 COLONIAL VILLAGE DR UNIT L10

Owner: MICHAUD DANIEL J & Co-Owner: MICHAUD KRISTINA G

Mailing Address: 6 AUTUMN STREET WINDHAM, NH 03087

-----

Prop ID: 61.A-12-11

Prop Location: 12 COLONIAL VILLAGE DR UNIT L11

Owner: MURPHY EDWARD

Co-Owner: Mailing Address:

12 COLONIAL VILLAGE DR UNIT 11

ARLINGTON, MA 02474

-----

Prop ID: 61.A-12-12

Prop Location: 12 COLONIAL VILLAGE DR UNIT L12

Owner: BAI DONGFANG Co-Owner: FEI XINGYUAN

Mailing Address: 60 PLEASANT ST #320 ARLINGTON, MA 02476

-----

Prop ID: 61.A-12-2

Prop Location: 12 COLONIAL VILLAGE DR UNIT L2

Owner: LAZURE PETER B/ LIFE ESTATE

Co-Owner: Mailing Address:

12 COLONIAL VILLAGE DR

UNIT 2

ARLINGTON, MA 02474

-----

Prop ID: 61.A-12-3

Prop Location: 12 COLONIAL VILLAGE DR UNIT L3

Owner: DAY STEVEN J

Co-Owner: Mailing Address:

12 COLONIAL VILLAGE DR #3 ARLINGTON, MA 02474

-----

Prop ID: 61.A-12-4

Prop Location: 12 COLONIAL VILLAGE DR UNIT L4

Owner: JONES MARILYN

Co-Owner: Mailing Address: 225 PHEASANT AVE ARLINGTON, MA 02474

Prop ID: 61.A-12-5

Prop Location: 12 COLONIAL VILLAGE DR UNIT L5

Owner: MORILLO-TAYLOR LILIANA

Co-Owner: Mailing Address: 2675 MONTROSE PL

SANTA BARBARA, CA 93105

-----

268 of 346

Prop ID: 61.A-12-6

Prop Location: 12 COLONIAL VILLAGE DR UNIT L6

Owner: KUNWAR CHHABINDRA Co-Owner: KUNWAR SUSHMA

Mailing Address:

12 COLONIAL VILLAGE DR #6 ARLINGTON, MA 02474

-----

Prop ID: 61.A-12-7

Prop Location: 12 COLONIAL VILLAGE DR UNIT L7

Owner: KEEFE BARBARA J

Co-Owner: Mailing Address:

12 COLONIAL VILLAGE DR #7 ARLINGTON, MA 02474

-----

Prop ID: 61.A-12-8

Prop Location: 12 COLONIAL VILLAGE DR UNIT L8

Owner: PIRNIA SHAHRZAD

Co-Owner: Mailing Address:

12 COLONIAL VILLAGE DR #8 ARLINGTON, MA 02474

-----

Prop ID: 61.A-12-9

Prop Location: 12 COLONIAL VILLAGE DR UNIT L9

Owner: FERREIRA JOYCE P

Co-Owner: Mailing Address:

12 COLONIAL VILLAGE DR #9 ARLINGTON, MA 02474

-----

Prop ID: 61.A-1-3

Prop Location: 1 COLONIAL VILLAGE DR UNIT A3

Owner: FARINO CARLOS

Co-Owner: FARINO-VIDAL ZORAYDA

Mailing Address: 4 SYLVIA ST

LEXINGTON, MA 02421

\_\_\_\_\_

Prop ID: 61.A-1-4

Prop Location: 1 COLONIAL VILLAGE DR UNIT A4

Owner: GRAINGER LAURA J

Co-Owner: Mailing Address: 424 WALDEN ST

CAMBRIDGE, MA 02138-1351

------

Prop ID: 61.A-1-5

Prop Location: 1 COLONIAL VILLAGE DR UNIT A5

Owner: WU DAI Co-Owner: Mailing Address:

1 COLONIAL VILLAGE DR #5 ARLINGTON, MA 02474

\_\_\_\_\_

Prop ID: 61.A-1-6

Prop Location: 1 COLONIAL VILLAGE DR UNIT A6

Owner: CARSER DIANE L

Co-Owner: Mailing Address:

1 COLONIAL VILLAGE DR #6 ARLINGTON, MA 02474

-----

Prop ID: 61.A-1-7

Prop Location: 1 COLONIAL VILLAGE DR UNIT A7

Owner: ISMAYLOV DMITRIY

Co-Owner: Mailing Address: 15 NERN ST NATICK, MA 01760

\_\_\_\_\_

Prop ID: 61.A-1-8

Prop Location: 1 COLONIAL VILLAGE DR UNIT A8

Owner: WANG PINGLANG & YING

Co-Owner: Mailing Address:

9 COLONIAL VILLAGE DR # 6 ARLINGTON, MA 02474

-----

Prop ID: 61.A-1-9

Prop Location: 1 COLONIAL VILLAGE DR UNIT A9 Owner: SABIO DARIO R & JOSEFINA B/TRS Co-Owner: SABIO FMLY REVOCABLE LIVING TR

Mailing Address: 10598 SANTERNO ST LAS VEGAS, NV 89141

-----

Prop ID: 61.A-2-1

Prop Location: 2 COLONIAL VILLAGE DR UNIT B1

Owner: DONG JENNIFER Q Co-Owner: HAN XIAOGANG

Mailing Address:

2 COLONIAL VILLAGE DR UNIT 1

ARLINGTON, MA 02474

\_\_\_\_\_

Prop ID: 61.A-2-10

Prop Location: 2 COLONIAL VILLAGE DR UNIT B10

Owner: TAM THOMAS & Co-Owner: TAM WINNIE YIN

Mailing Address:

25 WINCHESTER DRIVE LEXINGTON, MA 02420

-----

Prop ID: 61.A-2-11

Prop Location: 2 COLONIAL VILLAGE DR UNIT B11

Owner: ROSENFELD CAROLYN D

Co-Owner: Mailing Address:

269 CAMBRIDGE RD #202 WOBURN, MA 01801

.....

Prop ID: 61.A-2-12

Prop Location: 2 COLONIAL VILLAGE DR UNIT B12

Owner: TANO YUKI NOBU

Co-Owner: Mailing Address:

2 COLONIAL VILLAGE DR #12 ARLINGTON, MA 02474

-----

Prop ID: 61.A-2-2

Prop Location: 2 COLONIAL VILLAGE DR UNIT B2

Owner: SQUIRES PROPERTIES LLC

Co-Owner: Mailing Address:

344 BISHOPS FOREST DR WALTHAM, MA 02452

-----

Prop ID: 61.A-2-3

Prop Location: 2 COLONIAL VILLAGE DR UNIT B3

Owner: BERGMAN BRUCE L

Co-Owner: Mailing Address:

2 COLONIAL VILLAGE DR #3 ARLINGTON, MA 02474

-----

Prop ID: 61.A-2-4

Prop Location: 2 COLONIAL VILLAGE DR UNIT B4

Owner: LEDDY WILLIAM A

Co-Owner: Mailing Address:

2 COLONIAL VILLAGE DR #4 ARLINGTON, MA 02474

-----

Prop ID: 61.A-2-5

Prop Location: 2 COLONIAL VILLAGE DR UNIT B5

Owner: ZHANG YUANYE Co-Owner: HAO XINMING

Mailing Address:

2 COLONIAL VILLAGE DR UNIT 5

ARLINGTON, MA 02474

\_\_\_\_\_

Prop ID: 61.A-2-6

Prop Location: 2 COLONIAL VILLAGE DR UNIT B6 Owner: MORONEY KEVIN F & PAUL R/TRS Co-Owner: MORONEY FAMILY REALTY TRUST

Mailing Address:

2 COLONIAL VILLAGE DR #6 ARLINGTON, MA 02474

-----

Prop ID: 61.A-2-7

Prop Location: 2 COLONIAL VILLAGE DR UNIT B7

Owner: QUAN SUSAN

Co-Owner: Mailing Address: 67 SLADE ST

BELMONT, MA 02478

\_\_\_\_\_

Prop ID: 61.A-2-8

Prop Location: 2 COLONIAL VILLAGE DR UNIT B8

Owner: WANG ROBERT T & KATHY K/TRS

Co-Owner: WANG REALTY TRUST

Mailing Address: 402 HEATHER DR LYNNFIELD, MA 01940

-----

Prop ID: 61.A-2-9

Prop Location: 2 COLONIAL VILLAGE DR UNIT B9

Owner: WANG LIANGYUN

Co-Owner: Mailing Address:

75 SAINT ALPHONSUS ST BOSTON, MA 02120

-----

Prop ID: 61.A-3-1

Prop Location: 3 COLONIAL VILLAGE DR UNIT C1

Owner: COSTA MARIA C

Co-Owner: Mailing Address: 39 BENTON RD

SOMERVILLE, MA 02143

-----

Prop ID: 61.A-3-10

Prop Location: 3 COLONIAL VILLAGE DR UNIT C10

Owner: CRONIN WILLIAM E JR

Co-Owner: Mailing Address: 327 LOWELL ST

LEXINGTON, MA 02420

-----

Prop ID: 61.A-3-11

Prop Location: 3 COLONIAL VILLAGE DR UNIT C11

Owner: KINIRY JOHN J JR

Co-Owner: Mailing Address:

3 COLONIAL VILLAGE DR #11 ARLINGTON, MA 02474

-----

Prop ID: 61.A-3-12

Prop Location: 3 COLONIAL VILLAGE DR UNIT C12

Owner: DITROIA ELIZABETH

Co-Owner: Mailing Address:

3 COLONIAL VILLAGE DR # 12 ARLINGTON, MA 02474

\_\_\_\_\_

Prop ID: 61.A-3-2

Prop Location: 3 COLONIAL VILLAGE DR UNIT C2

Owner: BENNETT FREDERICK

Co-Owner: BENNETT YUAN WEI MARY

Mailing Address:

3 COLONIAL VILLAGE DR #2 ARLINGTON, MA 02474

-----

270 of 346

\_\_\_\_\_

Prop ID: 61.A-3-3

Prop Location: 3 COLONIAL VILLAGE DR UNIT C3

Owner: LEE RICHARD

Co-Owner: Mailing Address:

3 COLONIAL VILLAGE DR #3 ARLINGTON, MA 02474

-----

Prop ID: 61.A-3-4

Prop Location: 3 COLONIAL VILLAGE DR UNIT C4 Owner: KILLOUGH MATTHEW ETAL/TRUSTEES Co-Owner: MAHON FAMILY IRREVOCABLE TRUST

Mailing Address: 17-19 ALMA AVE BELMONT, MA 02478

-----

Prop ID: 61.A-3-5

Prop Location: 3 COLONIAL VILLAGE DR UNIT C5

Owner: FENG DUANSI

Co-Owner: Mailing Address:

3 COLONIAL VILLAGE DR #5 ARLINGTON, MA 02474

\_\_\_\_\_

Prop ID: 61.A-3-6

Prop Location: 3 COLONIAL VILLAGE DR UNIT C6

Owner: THAMES THOMAS L Co-Owner: THAMES ELLEN M

Mailing Address:

3 COLONIAL VILLAGE DR #6 ARLINGTON, MA 02474

-----

Prop ID: 61.A-3-7

Prop Location: 3 COLONIAL VILLAGE DR UNIT C7

Owner: CAMERON MELANIE

Co-Owner: Mailing Address: 9 PRINCETON ROAD ARLINGTON, MA 02474

-----

Prop ID: 61.A-3-8

Prop Location: 3 COLONIAL VILLAGE DR UNIT C8

Owner: WANG ROBERT T & KATHY K/TRS

Co-Owner: WANG REALTY TRUST

Mailing Address: 402 HEATHER RD LYNNFIELD, MA 01940

\_\_\_\_\_

Prop ID: 61.A-3-9

Prop Location: 3 COLONIAL VILLAGE DR UNIT C9

Owner: LARSEN DAVID L

Co-Owner: Mailing Address:

14 WESTERN AVE UNIT 2 GLOUCESTER, MA 01930

\_\_\_\_\_

Prop ID: 61.A-4-1

Prop Location: 4 COLONIAL VILLAGE DR UNIT D1

Owner: JUNG JONATHAN

Co-Owner: Mailing Address:

4 COLONIAL VILLAGE DR #1 ARLINGTON, MA 02474

-----

Prop ID: 61.A-4-10

Prop Location: 4 COLONIAL VILLAGE DR UNIT D10

Owner: THOMPSON JOHN R & JUDITH

Co-Owner: Mailing Address: 20 CONNOLLY RD BILLERICA, MA 01821

-----

Prop ID: 61.A-4-11

Prop Location: 4 COLONIAL VILLAGE DR UNIT D11

Owner: ONEIL EMILY

Co-Owner: Mailing Address:

4 COLONIAL VILLAGE DR #11 ARLINGTON, MA 02474

.....

Prop ID: 61.A-4-12

Prop Location: 4 COLONIAL VILLAGE DR UNIT D12
Owner: COMMONWEALTH BOSTON REALTY LLC

Co-Owner: Mailing Address:

111 PERKINS STREET #192 JAMAICA PLAIN, MA 02130

-----

Prop ID: 61.A-4-2

Prop Location: 4 COLONIAL VILLAGE DR UNIT D2 Owner: COLONIAL VILLAGE CONDOMINIUM T

Co-Owner: Mailing Address: 376 MASS AVE

C/O BARRINGTON MANAGEMENT

ARLINGTON, MA 02474

-----

Prop ID: 61.A-4-3

Prop Location: 4 COLONIAL VILLAGE DR UNIT D3

Owner: JOHNSON CARL R

Co-Owner: Mailing Address: 75 WILSON RD BEDFORD, MA 01730

-----

Prop ID: 61.A-4-4

Prop Location: 4 COLONIAL VILLAGE DR UNIT D4

Owner: SHIEH TONY TUNG HSIEN

Co-Owner: CHAN WING CHI

Mailing Address: 50 CHANDLER RD BURLINGTON, MA 01803

-----

271 of 346

Prop ID: 61.A-4-5

Prop Location: 4 COLONIAL VILLAGE DR UNIT D5

Owner: JENNINGS LAURIE/TRUSTEE

Co-Owner: SANDRA L FJELD 2017 IRREVOCABL

Mailing Address:

4 COLONIAL VILLAGE DR #5 ARLINGTON, MA 02474

-----

Prop ID: 61.A-4-6

Prop Location: 4 COLONIAL VILLAGE DR UNIT D6

Owner: MANANDHAR ANILA

Co-Owner: Mailing Address: 2 ST MARY`S RD

BURLINGTON, MA 01803

Prop ID: 61.A-4-7

Prop Location: 4 COLONIAL VILLAGE DR UNIT D7

Owner: PHAM GIANG T M

Co-Owner: Mailing Address:

4 COLONIAL VILLAGE DR #7 ARLINGTON, MA 02474

-----

Prop ID: 61.A-4-8

Prop Location: 4 COLONIAL VILLAGE DR UNIT D8

Owner: XIE CHAO Co-Owner: YAN MINGLI Mailing Address: 47 SOMERSET RD LEXINGTON, MA 02420

-----

Prop ID: 61.A-4-9

Prop Location: 4 COLONIAL VILLAGE DR UNIT D9

Owner: KIM MYUNG HEE

Co-Owner: Mailing Address: 52 WOODLAND ROAD CARLISLE, MA 01741

-----

Prop ID: 61.A-5-1

Prop Location: 5 COLONIAL VILLAGE DR UNIT E1
Owner: LEXINGTON REALTY HOLDINGS LLC

Co-Owner: Mailing Address: PO BOX 134

LEXINGTON, MA 02420

\_\_\_\_\_

Prop ID: 61.A-5-10

Prop Location: 5 COLONIAL VILLAGE DR UNIT E10

Owner: OCALLAGHAN KELLY & Co-Owner: SCHNEIDER BRENDYN

Mailing Address:

5 COLONIAL VILLAGE DR #10 ARLINGTON, MA 02474

\_\_\_\_\_

Prop ID: 61.A-5-11

Prop Location: 5 COLONIAL VILLAGE DR UNIT E11

Owner: CHENG HUI Co-Owner: WANG HUI Mailing Address:

5 COLONIAL VILLAGE DR #11 ARLINGTON, MA 02474

-----

Prop ID: 61.A-5-12

Prop Location: 5 COLONIAL VILLAGE DR UNIT E12

Owner: HUANG GRACE

Co-Owner: Mailing Address:

5 COLONIAL VILLAGE DR #12 ARLINGTON, MA 02476

-----

Prop ID: 61.A-5-2

Prop Location: 5 COLONIAL VILLAGE DR UNIT E2 Owner: COLARUSSO ANTHONY M TRUSTEE

Co-Owner: ADEM NOMINEE TRUST

Mailing Address: 22 MILL ST SUITE 305 ARLINGTON, MA 02476

\_\_\_\_\_

Prop ID: 61.A-5-3

Prop Location: 5 COLONIAL VILLAGE DR UNIT E3

Owner: SMITH IRENE H

Co-Owner: Mailing Address:

5 COLONIAL VILLAGE DR #3 ARLINGTON, MA 02474

-----

Prop ID: 61.A-5-4

Prop Location: 5 COLONIAL VILLAGE DR UNIT E4

Owner: JAIN SUJIT Co-Owner:

Mailing Address:

5 COLONIAL VILLAGE DR #4 ARLINGTON, MA 02474

-----

Prop ID: 61.A-5-5

Prop Location: 5 COLONIAL VILLAGE DR UNIT E5

Owner: WU PHILIP C

Co-Owner: Mailing Address:

10 BROADWAY PL APT 3 SOMERVILLE, MA 02145

\_\_\_\_\_

Prop ID: 61.A-5-6

Prop Location: 5 COLONIAL VILLAGE DR UNIT E6

Owner: GROSS GERALDINE R

Co-Owner: Mailing Address:

5 COLONIAL VILLAGE DR #6 ARLINGTON, MA 02474

.....

Prop ID: 61.A-5-7

Prop Location: 5 COLONIAL VILLAGE DR UNIT E7

Owner: AHMARI SOHRAB

Co-Owner: Mailing Address:

5 COLONIAL VILLAGE DR #7 ARLINGTON, MA 02474

\_\_\_\_\_

Prop ID: 61.A-5-8

Prop Location: 5 COLONIAL VILLAGE DR UNIT E8

Owner: MASKEY ANURAG Co-Owner: SHRESTHA SHACHI

Mailing Address: 47 WALLACE ST

NEWTON HIGHLANDS, MA 02461

-----

Prop ID: 61.A-5-9

Prop Location: 5 COLONIAL VILLAGE DR UNIT E9

Owner: LAWSON MARTHA A

Co-Owner: Mailing Address: 70 MT VERNON ST HAVERHILL, MA 01830

-----

Prop ID: 61.A-6-1

Prop Location: 6 COLONIAL VILLAGE DR UNIT F1

Owner: MENDEZ VICTOR F

Co-Owner: Mailing Address: 11 RICHARDSON RD STONEHAM, MA 02180

-----

Prop ID: 61.A-6-10

Prop Location: 6 COLONIAL VILLAGE DR UNIT F10

Owner: WOLFE DANIEL P

Co-Owner: Mailing Address:

6 COLONIAL VILLAGE DR #10 ARLINGTON, MA 02474

\_\_\_\_\_

Prop ID: 61.A-6-11

Prop Location: 6 COLONIAL VILLAGE DR UNIT F11

Owner: HARRIS JEFFREY M

Co-Owner: Mailing Address:

6 COLONIAL VILLAGE DR #11 ARLINGTON, MA 02474

-----

Prop ID: 61.A-6-12

Prop Location: 6 COLONIAL VILLAGE DR UNIT F12

Owner: LEE FONG-CHANG Co-Owner: LEE SHIU-IN Mailing Address:

walling Address.

6 COLONIAL VILLAGE DR #12 ARLINGTON, MA 02474

\_\_\_\_\_

Prop ID: 61.A-6-2

Prop Location: 6 COLONIAL VILLAGE DR UNIT F2

Owner: CATALDI MAUREEN

Co-Owner: Mailing Address:

6 COLONIAL VILLAGE DR UNIT 2

ARLINGTON, MA 02474

\_\_\_\_\_

Prop ID: 61.A-6-3

Prop Location: 6 COLONIAL VILLAGE DR UNIT F3

Owner: RANNEY ROGER ERIC

Co-Owner: Mailing Address:

6 COLONIAL VILLAGE DR #3 ARLINGTON, MA 02474

-----

Prop ID: 61.A-6-4

Prop Location: 6 COLONIAL VILLAGE DR UNIT F4

Owner: MEI KATHY XIUWEN

Co-Owner: Mailing Address: 32 ARCOLA ST

LEXINGTON, MA 02420

-----

Prop ID: 61.A-6-5

Prop Location: 6 COLONIAL VILLAGE DR UNIT F5

Owner: SHENG JIANXIONG & Co-Owner: LIU WENYING

Mailing Address:

6 COLONIAL VILLAGE DR #5 ARLINGTON, MA 02474

-----

Prop ID: 61.A-6-6

Prop Location: 6 COLONIAL VILLAGE DR UNIT F6
Owner: BRIGHTMAN HELEN A ETAL/TRUSTEE
Co-Owner: BRIGHTMAN NOMINEE REALTY TRUST

Mailing Address: 13 EDSON ST NASHUA, NH 03064

-----

Prop ID: 61.A-6-7

Prop Location: 6 COLONIAL VILLAGE DR UNIT F7

Owner: MACAULEY LYNNE A

Co-Owner: Mailing Address:

6 COLONIAL VILLAGE DR #7 ARLINGTON, MA 02474

-----

Prop ID: 61.A-6-8

Prop Location: 6 COLONIAL VILLAGE DR UNIT F8

Owner: ZHANG YANFANG Co-Owner: CUI JIKE Mailing Address:

78 MAPLE ST

BELMONT, MA 02478

\_\_\_\_\_

Prop ID: 61.A-6-9

Prop Location: 6 COLONIAL VILLAGE DR UNIT F9

Owner: PERKINS ELLIOTT W & ANITA C Co-Owner: TRS/ PERKINS FAMILY TRUST

Mailing Address:

17 STEEPLE CHASE CIRCLE WESTFORD, MA 01886

-----

Prop ID: 61.A-7-1

Prop Location: 7 COLONIAL VILLAGE DR UNIT G1

Owner: LAMB MARTHA

Co-Owner: Mailing Address:

7 COLONIAL VILLAGE DR #1 ARLINGTON, MA 02474

-----

Prop ID: 61.A-7-10

Prop Location: 7 COLONIAL VILLAGE DR UNIT G10

Owner: GIOVINAZZO EMMA

Co-Owner: Mailing Address:

7 COLONIAL VILLAGE DR #10 ARLINGTON, MA 02474

\_\_\_\_\_

Prop ID: 61.A-7-11

Prop Location: 7 COLONIAL VILLAGE DR UNIT G11

Owner: MUSE CAROLYN M

Co-Owner: Mailing Address: 1 PONDEROSA DR PELHAM, NH 03076

\_\_\_\_\_

Prop ID: 61.A-7-12

Prop Location: 7 COLONIAL VILLAGE DR UNIT G12

Owner: AUSTIN ALEXANDER B

Co-Owner: Mailing Address:

7 COLONIAL VILLAGE DR #12 ARLINGTON, MA 02474

\_\_\_\_\_

Prop ID: 61.A-7-2

Prop Location: 7 COLONIAL VILLAGE DR UNIT G2

Owner: JANTZ JOAN E

Co-Owner: Mailing Address:

7 COLONIAL VILLAGE DR #2 ARLINGTON, MA 02474

-----

Prop ID: 61.A-7-3

Prop Location: 7 COLONIAL VILLAGE DR UNIT G3

Owner: FARRELL MICHAEL W Co-Owner: STEIN BRITTANY T

Mailing Address:

7 COLONIAL VILLAGE DR #3 ARLINGTON, MA 02474

\_\_\_\_\_

Prop ID: 61.A-7-4

Prop Location: 7 COLONIAL VILLAGE DR UNIT G4

Owner: MAUGEL NATHAN/JENNIFER

Co-Owner: Mailing Address: 60 MUNROE DR

EAST HAMPSTEAD, NH 03826

-----

Prop ID: 61.A-7-5

Prop Location: 7 COLONIAL VILLAGE DR UNIT G5

Owner: SHIU PLACID K

Co-Owner: Mailing Address: 19 GRANT PL

LEXINGTON, MA 02420

-----

Prop ID: 61.A-7-6

Prop Location: 7 COLONIAL VILLAGE DR UNIT G6

Owner: MAHER DAVID F/TRUSTEE Co-Owner: 7 COLONIAL TRUST

Mailing Address: 966 BROADWAY

SOMERVILLE, MA 02144

-----

Prop ID: 61.A-7-7

Prop Location: 7 COLONIAL VILLAGE DR UNIT G7

Owner: FOSTER PETER Co-Owner: FOSTER LINDA B

Mailing Address: 4720 DOVEDALE DR WILLIAMSBURG, VA 23188

-----

Prop ID: 61.A-7-8

Prop Location: 7 COLONIAL VILLAGE DR UNIT G8

Owner: ZHANG ZHENZHEN & Co-Owner: CHEN KUN

Co-Owner: CHEN KUN Mailing Address: 58 CRESTVIEW RD BELMONT, MA 02478

-----

Prop ID: 61.A-7-9

Prop Location: 7 COLONIAL VILLAGE DR UNIT G9

Owner: DOLAN ANASTASIA G

Co-Owner: Mailing Address:

7 COLONIAL VILLAGE DR #9 ARLINGTON, MA 02474

-----

Prop ID: 61.A-8-1

Prop Location: 8 COLONIAL VILLAGE DR UNIT H1 Owner: LEXINGTON REALTY HOLDINGS LLC

Co-Owner: Mailing Address: PO BOX 134

LEXINGTON, MA 02420

\_\_\_\_\_

Prop ID: 61.A-8-10

Prop Location: 8 COLONIAL VILLAGE DR UNIT H10

Owner: JONAS MICHAEL

Co-Owner: Mailing Address:

8 COLONIAL VILLAGE DR #10 ARLINGTON, MA 02476

-----

Prop ID: 61.A-8-11

Prop Location: 8 COLONIAL VILLAGE DR UNIT H11

Owner: RAHMATPOUR SOHAILA--ETAL

Co-Owner: NAKHAEE HAMID

Mailing Address:

20 OVERBROOK DRIVE WELLESLEY, MA 02482

-----

Prop ID: 61.A-8-12

Prop Location: 8 COLONIAL VILLAGE DR UNIT H12

Owner: MILLER CHERYL S

Co-Owner: Mailing Address:

8 COLONIAL VILLAGE DR #12 ARLINGTON, MA 02474

-----

Prop ID: 61.A-8-2

Prop Location: 8 COLONIAL VILLAGE DR UNIT H2

Owner: KNIGHT WILL

Co-Owner: Mailing Address:

8 COLONIAL VILLAGE DR #2 ARLINGTON, MA 02474

-----

Prop ID: 61.A-8-3

Prop Location: 8 COLONIAL VILLAGE DR UNIT H3

Owner: ALLAL-LABIAD CHADEN

Co-Owner: Mailing Address:

8 COLONIAL VILLAGE DR #3 ARLINGTON, MA 02474

\_\_\_\_\_

Prop ID: 61.A-8-4

Prop Location: 8 COLONIAL VILLAGE DR UNIT H4 Owner: MUCKENHOUPT BENJAMIN & MARY K

Co-Owner: Mailing Address: 19 WHIPPLE RD

LEXINGTON, MA 02420

-----

Prop ID: 61.A-8-5

Prop Location: 8 COLONIAL VILLAGE DR UNIT H5

Owner: KING ALLISON J

Co-Owner: Mailing Address:

8 COLONIAL VILLAGE DR #5 ARLINGTON, MA 02474

\_\_\_\_\_

Prop ID: 61.A-8-6

Prop Location: 8 COLONIAL VILLAGE DR UNIT H6

Owner: LENKAUSKAS STEPHEN J & Co-Owner: LENKAUSKAS MEGAN E

Mailing Address: 98 CLAY ST

CAMBRIDGE, MA 02140

Prop ID: 61.A-8-7

Prop Location: 8 COLONIAL VILLAGE DR UNIT H7

Owner: SHEEHAN KEVIN/ANDREA

Co-Owner: Mailing Address: 228 FOX HILL RD

BURLINGTON, MA 01803

-----

Prop ID: 61.A-8-8

Prop Location: 8 COLONIAL VILLAGE DR UNIT H8

Owner: RUSSO ANMARIE

Co-Owner: Mailing Address:

8 COLONIAL VILLAGE DR #8 ARLINGTON, MA 02474

\_\_\_\_\_

Prop ID: 61.A-8-9

Prop Location: 8 COLONIAL VILLAGE DR UNIT H9

Owner: ALDORT EDITH J

Co-Owner: Mailing Address: 9 SKAHAN RD

BELMONT, MA 02478

-----

Prop ID: 61.A-9-1

Prop Location: 9 COLONIAL VILLAGE DR UNIT I1

Owner: GOODWIN DESIREE

Co-Owner: Mailing Address:

9 COLONIAL VILLAGE DR #1 ARLINGTON, MA 02474

-----

Prop ID: 61.A-9-10

Prop Location: 9 COLONIAL VILLAGE DR UNIT I10

Owner: PRESTON DIANE

Co-Owner: Mailing Address: 186 NEWPORT ST ARLINGTON, MA 02476

-----

Prop ID: 61.A-9-11

Prop Location: 9 COLONIAL VILLAGE DR UNIT I11

Owner: VALDETTARO VERONIQUE A

Co-Owner: Mailing Address:

9 COLONIAL VILLAGE DR #11 ARLINGTON, MA 02474

.....

Prop ID: 61.A-9-12

Prop Location: 9 COLONIAL VILLAGE DR UNIT I12

Owner: FLEMING ELLEN T

Co-Owner: Mailing Address:

9 COLONIAL VILLAGE DR #12 ARLINGTON, MA 02474

-----

Prop ID: 61.A-9-2

Prop Location: 9 COLONIAL VILLAGE DR UNIT 2

Owner: NEWMARK GERRY G

Co-Owner: Mailing Address:

9 COLONIAL VILLAGE DR #2 ARLINGTON, MA 02474

-----

Prop ID: 61.A-9-3

Prop Location: 9 COLONIAL VILLAGE DR UNIT I3

Owner: ELBANNAN SAMAA

Co-Owner: Mailing Address:

9 COLONIAL VILLAGE DR #13 ARLINGTON, MA 02476

-----

Prop ID: 61.A-9-4

Prop Location: 9 COLONIAL VILLAGE DR UNIT I4

Owner: DONOVAN JOANNE

Co-Owner: Mailing Address:

9 COLONIAL VILLAGE DR #14 ARLINGTON, MA 02474

-----

Prop ID: 61.A-9-5

Prop Location: 9 COLONIAL VILLAGE DR UNIT I5

Owner: LAI RALPH W M & CINDY S T

Co-Owner: Mailing Address: 28 CORNERSTONE CT DOYLESTOWN, PA 18901

-----

Prop ID: 61.A-9-6

Prop Location: 9 COLONIAL VILLAGE DR UNIT 16

Owner: WANG PINGLANG & YING

Co-Owner: Mailing Address:

9 COLONIAL VILLAGE DR #6 ARLINGTON, MA 02474

-----

Prop ID: 61.A-9-7

Prop Location: 9 COLONIAL VILLAGE DR UNIT 17

Owner: ZHANG YANFANG &

Co-Owner: CUI JIKE Mailing Address: 78 MAPLE ST

BELMONT, MA 02478

\_\_\_\_\_

Prop ID: 61.A-9-8

Prop Location: 9 COLONIAL VILLAGE DR UNIT 18

Owner: SHINGU IKUE

Co-Owner: Mailing Address:

9 COLONIAL VILLAGE DR #8 ARLINGTON, MA 02474

\_\_\_\_\_

Prop ID: 61.A-9-9

Prop Location: 9 COLONIAL VILLAGE DR UNIT 19

Owner: MAC INNES PATRICIA

Co-Owner: Mailing Address: 32 ST CATHERINE RD NORWOOD, MA 02062

-----

Prop ID: 62-1-4.A

Prop Location: 16-38 DRAKE RD Arlington, MA Owner: ARLINGTON HOUSING AUTHORITY

Co-Owner: DRAKE VILLAGE

Mailing Address: 730 MASS AVE

ARLINGTON, MA 02476

-----

Prop ID: 85-1-7

Prop Location: 4 WESTMORELAND AVE Arlington, MA

Owner: CALLAGHAN OWEN & JESSICA

Co-Owner: Mailing Address:

4 WESTMORELAND AVE ARLINGTON, MA 02474

-----

Prop ID: 85-1-8

Prop Location: 239 LOWELL ST Arlington, MA

Owner: VERDERESE JOHN T

Co-Owner: Mailing Address: 239 LOWELL STREET ARLINGTON, MA 02474

-----

Prop ID: 85-1-9

Prop Location: 243 LOWELL ST Arlington, MA

Owner: WYATT PATRICIA L

Co-Owner: Mailing Address: 243 LOWELL STREET ARLINGTON, MA 02474

-----

Prop ID: 85-4-14

Prop Location: 3 WESTMORELAND AVE Arlington, MA

Owner: ENG DAVID H

Co-Owner: CANTY ANDREA M

Mailing Address:

3 WESTMORELAND AVE ARLINGTON, MA 02474

-----

Prop ID: 85-4-15

Prop Location: 221 LOWELL ST Arlington, MA Owner: LAMONT STUART & BARBARA

Co-Owner: Mailing Address: 221 LOWELL STREET ARLINGTON, MA 02474

-----

Prop ID: 85-4-16

Prop Location: 219 LOWELL ST Arlington, MA

Owner: SMITH ROBERT G & JANE R

Co-Owner: Mailing Address: 219 LOWELL STREET ARLINGTON, MA 02474

-----

Prop ID: 85-4-21

Prop Location: 7 WEST COURT TERR Arlington, MA

Owner: ABBOTT ELIZABETH A Co-Owner: CAVANAGH EMMET

Mailing Address:

7 WEST COURT TERRACE ARLINGTON, MA 02474

\_\_\_\_\_

Prop ID: 85-4-22

Prop Location: 207 LOWELL ST Arlington, MA

Owner: MARTENS CHINA L Co-Owner: MARTENS SIEGFRIED

Mailing Address: 207 LOWELL STREET ARLINGTON, MA 02474

-----

Prop ID: 85-4-23

Prop Location: 203 LOWELL ST Arlington, MA

Owner: SALOCKS JEFFREY D--ETAL Co-Owner: STAFFORD SHARON L

Mailing Address: 203 LOWELL STREET ARLINGTON, MA 02474

-----

Prop ID: 85-4-26

Prop Location: 197 LOWELL ST Arlington, MA Owner: GETTLER JUSTIN B & HOLLY K

Co-Owner: Mailing Address: 197 LOWELL ST

ARLINGTON, MA 02474

-----

Prop ID: 86-5-10.A

Prop Location: 255 LOWELL ST Arlington, MA

Owner: GALVIN ANNE M

Co-Owner: Mailing Address: 255 LOWELL ST

ARLINGTON, MA 02474

Prop ID: 86-5-10.B

Prop Location: 0-LOT LOWELL ST Arlington, MA

Owner: PLANT SUSAN W Co-Owner: CHO DANYUL Y

Mailing Address:

257 LOWELL STREET ARLINGTON, MA 02474

\_\_\_\_\_

Prop ID: 86-5-11

Prop Location: 257 LOWELL ST Arlington, MA

Owner: PLANT SUSAN W Co-Owner: CHO DANYUL Y

Mailing Address:

257 LÖWELL STREET ARLINGTON, MA 02474

\_\_\_\_\_

Prop ID: 86-5-12

Prop Location: 261 LOWELL ST Arlington, MA

Owner: SOUCY PAUL EDWARD Co-Owner: SILVERMAN MELANIE TIA

Mailing Address: 261 LOWELL STREET ARLINGTON, MA 02474

.....

Prop ID: 86-5-13

Prop Location: 265 LOWELL ST Arlington, MA

Owner: TAYLOR MEG M

Co-Owner: Mailing Address: 265 LOWELL ST

ARLINGTON, MA 02474

\_\_\_\_\_

Prop ID: 86-5-14

Prop Location: 269 LOWELL ST Arlington, MA

Owner: CANADAY JOHN T

Co-Owner: Mailing Address: 269 LOWELL ST

ARLINGTON, MA 02474

-----

Prop ID: 86-5-15

Prop Location: 271 LOWELL ST Arlington, MA

Owner: GEISSLER GARY J

Co-Owner: Mailing Address: 1 LOWELL STREET LEXINGTON, MA 02420

-----

Prop ID: 86-5-9

Prop Location: 251 LOWELL ST Arlington, MA

Owner: ALLEN THOMAS J & Co-Owner: SENESE MARGARET D

Mailing Address: 251 LOWELL STREET ARLINGTON, MA 02474

\_\_\_\_\_



100ft. Abutters of property 20-37 at MASSACHUSETTS AVE

Abutter	Street Address	Account No.	Tax Bill Address
20-56 TAAFFE JAMES L &	RINDGE AVE	2007	TAAFFE JAMES L & 43 RINDGE AVE LEXINGTON, MA 02420
13-421A TOWN OF LEXINGTON	BOW ST	1523	TOWN OF LEXINGTON 1625 MASS VE LEXINGTON, MA 02420
13-431A HU JOSEPH WEIZHEN &	15 SOUTH RINDGE AVE	1524	HU JOSEPH WEIZHEN & 15 SOUTH RINDGE AVE LEXINGTON, MA 02420
20-186 DAVIS SETH M &	60 ALBEMARLE AVE	2105	DAVIS SETH M & 60 ALBEMARLE AVE LEXINGTON, MA 02420
20-187 MACE JOHN L &	59 ALBEMARLE AVE	2106	MACE JOHN L & 59 ALBEMARLE AVE LEXINGTON, MA 02420
20-188 ALVES DANIEL D &	57 ALBEMARLE AVE	2107	ALVES DANIEL D & 57 ALBEMARLE AVE LEXINGTON, MA 02420
20-191 SILK FIELDS LLC	LOWELL ST	2110	SILK FIELDS LLC 7 FARM RD LEXINGTON, MA 02420
20-201 EMSBO- MATTINGLY STEPHEN D &	19 SOUTH RINDGE AVE	2118	EMSBO- MATTINGLY STEPHEN D & 19 SOUTH RINDGE AVE LEXINGTON, MA 02420
20-202A OCONNOR WILLIAM J III &	17 SOUTH RINDGE AVE	2172 278 of 346	OCONNOR WILLIAM J III & 17 SOUTH RINDGE AVE LEXINGTON, MA 02420



100ft. Abutters of property 20-37 at MASSACHUSETTS AVE

Abutter	Street Address	Account No.	Tax Bill Address
20-203 GOLDINGER JAMES E &	7 FARM RD	2119	GOLDINGER JAMES E & 7 FARM RD LEXINGTON, MA 02421
20-204 SILK FIELDS LLC	FARM RD	2120	SILK FIELDS LLC 7 FARM RD LEXINGTON, MA 02420
20-32B SENEL MURAT &	21 LOWELL ST	2124	SENEL MURAT & 21 LOWELL ST LEXINGTON, MA 02420
20-33A LOH WEN- LUAN	15 LOWELL ST	2125	LOH WEN- LUAN 15 LOWELL ST LEXINGTON, MA 02420
20-33B MANN EDWARD K & ELEANOR F &	11 LOWELL ST	2126	MANN EDWARD K & ELEANOR F & 11 LOWELL ST LEXINGTON, MA 02420
20-34 WEAVER ARLIS	5 LOWELL ST	1989	WEAVER ARLIS 5 LOWELL ST LEXINGTON, MA 02420
20-35 BOUDROT DANIELLE ALYSSA	3 LOWELL ST	1990	BOUDROT DANIELLE ALYSSA 3 LOWELL ST LEXINGTON, MA 02420
20-36 GEISSLER GARY J	1 LOWELL ST	1991	GEISSLER GARY J 271 LOWELL ST ARLINGTON, MA 02475
20-38A TOWN OF LEXINGTON	32 LOWELL ST	103093 279 of 346	TOWN OF LEXINGTON 1625 MASSACHUSETTS AVE LEXINGTON, MA 02420



100ft. Abutters of property 20-37 at MASSACHUSETTS AVE

Abutter	Street Address	Account No.	Tax Bill Address
20-40A TOWN OF LEXINGTON	LOWELL ST	2127	TOWN OF LEXINGTON 1625 MASSACHUSETTS AVE LEXINGTON, MA 02420
20-43 TOWN OF LEXINGTON	52 LOWELL ST	1997	TOWN OF LEXINGTON 1625 MASSACHUSETTS AVE LEXINGTON, MA 02420
20-54 MALAFEEW ERIC &	34 RAWSON AVE	2005	MALAFEEW ERIC & 34 RAWSON AVE LEXINGTON, MA 02420
20-55 WALLERSTEIN JOE SENNING & WALLERSTEIN	47 RINDGE AVE	2006	WALLERSTEIN JOE SENNING & WALLERSTEIN 47 RINDGE AVE LEXINGTON, MA 02420
20-57 TAAFFE JAMES L &	43 RINDGE AVE	2008	TAAFFE JAMES L & 43 RINDGE AVE LEXINGTON, MA 02420
20-58 CATALDO MARY A	39 RINDGE AVE	2009	CATALDO MARY A 39 RINDGE AVE LEXINGTON, MA 02420
20-59 SILVER MICHAEL L &	35 RINDGE AVE	2010	SILVER MICHAEL L & 35 RINDGE AVE LEXINGTON, MA 02420
20-60 COSTANZA FELIX J & COSTANZA LUCILLE TRS	RINDGE AVE	2011	COSTANZA FELIX J & COSTANZA LUCILLE TRS 113 WILMINGTON RD BURLINGTON, MA 01803
20-61 TOWN OF LEXINGTON	RINDGE AVE	2012 280 of 346	TOWN OF LEXINGTON 1625 MASS AVE LEXINGTON, MA 02420



100ft. Abutters of property 20-37 at MASSACHUSETTS AVE

Abutter	Street Address	Account No.	Tax Bill Address
20-62 TOWN OF LEXINGTON	RINDGE AVE	2013	TOWN OF LEXINGTON 1625 MASS AVE LEXINGTON, MA 02420
20-63 TOWN OF LEXINGTON	RINDGE AVE	2014	TOWN OF LEXINGTON 1625 MASS AVE LEXINGTON, MA 02420
20-64 TOWN OF LEXINGTON	RINDGE AVE	2015	TOWN OF LEXINGTON 1625 MASS AVE LEXINGTON, MA 02420
20-65 WEISSBURG DAVID L &	11 RINDGE AVE	2016	WEISSBURG DAVID L & 11 RINDGE AVE LEXINGTON, MA 02420
20-66 MORETTI WILLIAM J &	7 RINDGE AVE	2017	MORETTI WILLIAM J & 7 RINDGE AVE LEXINGTON, MA 02420
20-67 TEC NECHAMA & TEC LEON TRUSTEES	5 RINDGE AVE	2018	TEC NECHAMA & TEC LEON TRUSTEES 5 RINDGE AVE LEXINGTON, MA 02420
20-68 SHAPIRO ERIC &	1 RINDGE AVE	2019	SHAPIRO ERIC & 1 RINDGE AVE LEXINGTON, MA 02420
29-1A TOWN OF LEXINGTON	LILLIAN RD	3241	TOWN OF LEXINGTON 1625 MASS AVE LEXINGTON, MA 02420

# Appendix F



#### westondndsamoson.com

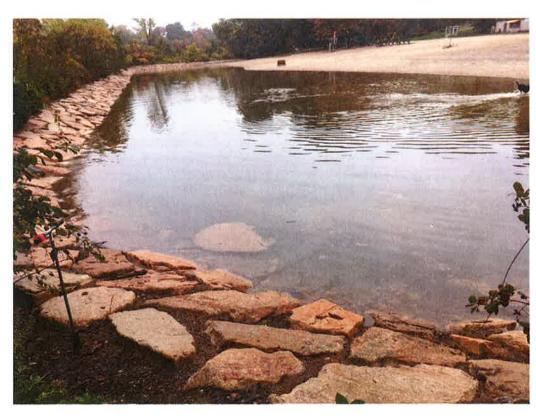
5 Centennial Drive Peabody, MA 01960 (HQ) tel: 978 532,1900

# Wetland Delineation Report



October 2018

ARLINGTON RESERVOIR ARLINGTON, MA



# WETLAND DELINEATION REPORT ARLINGTON RESERVOIR ARLINGTON / LEXINGTON, MA

# Prepared for TOWN OF ARLINGTON RECREATION DEPARTMENT

Prepared by
Weston & Sampson Engineers, Inc.
5 Centennial Drive
Peabody, MA 01960
978.532.1900

October 8, 2018

## Wetland Delineation Report

#### TABLE OF CONTENTS

Page
.0 SITE DESCRIPTION1-1
DELINEATION OF WETLAND RESOURCES. 2-1 2.1 Site Observations. 2-1 2.2 Wetland Delineation Methodology. 2-1 2.3 Bordering Vegetated Wetlands (BVW). 2-1 2.4 Bank. 2-1 2.5 Other Protected Areas. 2-3
.0 SUMMARY
.0 REFERENCES4-1
APPENDICES
ppendix A

\\wse03.local\\WSE\\Projects\\MA\\Arlington, MA\\Arlington Reservoir Master Plan Phase 1\\wetlands delineation 2018\_10\_03\\2 Wetland Delineation Report Body.docx



## Wetland Delineation Report

#### 1.0 SITE DESCRIPTION

On October 3, 2018, the presence of wetland resources was investigated the area of the bathing beach and one short (50 linear feet) walking path at Arlington Reservoir. The bathing beach is on the eastern edge of thet reservoir, with the northern portion of the beach in Lexington and the southern portion in Arlington. The delineated area along the short walking footpath is located along the northern edge of the reservoir, in Arlington.

The reservoir offers both passive and active recreational opportunities for both informal and formal use. It is used by community members and others year-round for walking, jogging, cross-country running and skiing, bird-watching, fishing, non-motorized boating, skating, dog walking and gardening. During the months of June, July and August, the Town operates a gated, chlorinated and filtered sandy bathing beach for resident and non-resident tag holders. The bathing beach area includes a bathhouse, concession stand, pump house with water filtration systems, picnic tables, benches and playground. Beyond the bathing beach area, there is a packed-dirt parking lot, forested area, a habitat garden, a reinforced dam with two outlets for flood mitigation, and a nearly one-mile trail path that encircles the water. Please see Figure 1 (Wetlands Field Map) and Figure 2 (USGS Topographic Map) in Appendix B of this report for the investigation area.

Wetland resource areas, including top of bank of inland waters, were identified and flagged in the field using pink flagging by a Weston & Sampson employee who is trained in the wetland delineation process using the Massachusetts Department of Environmental Protection (MassDEP) and the US Army Corps of Engineers methodology. A further description of these wetland resource areas is presented, below.

#### 2.0 DELINEATION OF WETLAND RESOURCES

#### 2.1 Site Observations

The Weston & Sampson wetland scientist observed the following protected wetland resources at the site:

Top of bank of inland waters

See Appendix A for site photographs.

According to the site's FEMA Flood Insurance Rate map (FIRM) indicates that there is a 100-year flood zone in the area at EL 160. See Appendix B for FIRM map.

#### 2.2 Wetland Delineation Methodology

Wetland delineation assessment was conducted in accordance to the Massachusetts Wetland Protection Act Regulations (310 CMR 10.55(2)(c)), Massachusetts Department of Environmental Protection (MassDEP) Delineating Bordering Vegetated Wetlands Under the Massachusetts Protection Act (March 1995), and ACOE Wetland Manual (Technical Report Y-87-1).

The methodology included the characterization of vegetation, soil any hydrologic conditions in both wetland and upland areas to identify the transitional area, which was used as the BVW limit. Pink flags with distinct flag numbers were left in the field to show wetland resource area limits.

#### 2.3 Bordering Vegetated Wetlands (BVW)

No bordering vegetated wetlands were notes in the investigation area on the day of the investigation.

#### 2.4 Bank

#### Inland Waters Bank

There were three different top of bank resource areas associated with Arlington Reservoir that were identified in the investigation area, including the inner bank along the berm that contains the bathing beach water, the outer bank along the berm that creates the bathing beach, and the section of bank



## Wetland Delineation Report

along the northern part of the reservoir. These three resource areas are described in further detail, below.

#### Inner Bank - Bathing Beach

The south, west, and north bank of the inner bank of the berm that contains water in the bathing beach area is lined with flat rock set in concrete (see photographs in Appendix A). Above the flat rock is soil and vegetation. The top of bank was determined based on the undercutting of the soil just above the flat rock.

The eastern shore is a manmade area consisting of a sandy beach which has a gentle slope as it transitions from the upland down into the water. On the day of the investigation, that was was approximately 3 – 4 feet below normal pool elevations. The top of bank on the beach area was determined based on the limit of vegetation on both the northern and southern ends of the eastern bank. This vegetation was a manicured grass area that extends upgradient into the upland area. The downgradient most point of this vegetation was considered the top of bank. See Appendix A for photographs of this area/bank limit.

Wetland flags were left on the southern, western and northern banks, including flags TOB-A1 through TOB-A15. While flags were not left on the eastern bank (the beach), a high accuracy GPS unit was used to record points at the top of bank at the beach. These points were labeled TOB-A16 through TOB-A22. See Appendix B, Figure 1 for a map of wetland flag locations.

#### Outer Bank – Bathing Beach

The outer bank of the berm that creates the bathing beach area was considered a bank which contains the Arlington Reservoir and consists of soil and vegetation. As noted above, water levels were approximately 3 – 4 feet below normal elevations. The top of bank was determined using the undercut area of the bank. Wetland flags TOB-B1 through TOB-B23 were left in the field to show the top of the outer berm bank.



# Wetland Delineation Report

#### Northern Bank of Reservoir

A small (approximately 50 linear feet) project will be proposed to improve a walking path, improve soil erosion conditions and conduct invasive species management. Because the walking path is near the bank of the reservoir, approximately 120 feet of the top of bank was delineated. The top of bank was determined using the undercut area of the bank. Wetland flags TOB-C1 through TOB-C5 were left in the field to show the top of the bank.

#### 2.5 Other Protected Areas

Besides what was noted above, Weston & Sampson created an environmental receptors map of the site to determine the presence of other protected areas (Appendix B, Figure 3). The data source of these map layers was the Massachusetts Geographic Information System (MassGIS). These areas included:

- NHESP Priority Habitats of Rare Species
- NHESP Estimated Habitats of Rare Wildlife
- NHESP Certified and Estimated Vernal Pools
- Areas of Critical Environmental Concern

None of the above mentioned resource areas were located in the inspections area.

Additionally, a FEMA Flood Insurance Rate Map (FIRM) was created online from the FEMA website to determine if there is a 100-year flood zone at the site. See Appendix B for FIRM map. As shown on the map, there is a 100-year flood zone in the investigation area.



# Wetland Delineation Report

#### 3.0 SUMMARY

On October 3, 2018, the presence of wetland resources was investigated at Arlington Reservoir in both Arlington and Lexington, Massachusetts. Wetland resource areas including top of bank were identified and flagged in the field. Additional MassGIS and FEMA FIRM mapping indicated that the only other environmental resources mapped for the area that was present at the site was the 100-year flood zone.

#### 4.0 REFERENCES

Jackson, Scott. 1995. "Delineating Bordering Vegetated Wetlands Under the Massachusetts Wetlands Protection Act." Massachusetts Department of Environmental Protection.

Massachusetts Division of Fisheries and Wildlife, Natural Heritage and Endangered Species Program. Massachusetts Natural Heritage Atlas, 13th Edition with 2017 web updates. Accessed on 10/9/18.

Massachusetts Geographic Information System. January 2009. <u>Outstanding Resource Waters.</u> Massachusetts Department of Environmental Protection. Accessed on 10/9/18.

Massachusetts Geographic Information System, December 2003. <u>Areas of Critical Environmental Concern</u>. Massachusetts Department of Environmental Protection. Accessed on 10/9/18,

Newcomb, Lawrence. 1977. Newcomb's Wildflower Guide. Little, Brown and Company.

Web Soil Survey of Middlesex County, Massachusetts. United States Department of Agriculture, Soil Conservation Service, in cooperation with Massachusetts Agricultural Experiment Station

United States Department of Agriculture, Natural Resources Conservation Service. 2010. Field Indicators of Hydric Soils in the United States, Version 7.0. L. M. Vasilas, G. W. Hurt, and C. V. Noble (eds.). USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils.

USACOE, January 1987, Corps of Engineers Wetlands Delineation Manuel, Wetlands Research Program Technical Report Y-87-1.

FEMA Flood Map Service Center, online at msc.fema.gov/portal Assessed on 10/8/18

Tiner, Jr., Ralph W., 2005, Field Guide to Nontidal Wetland Identification

Tiner, Jr., Ralph W, 2009, Field Guide to Tidal Wetland Plants of the Northeastern United States and Neighboring Canada.

Wojtec, Michael, Bard - A field Guide to Trees of the Northeast.

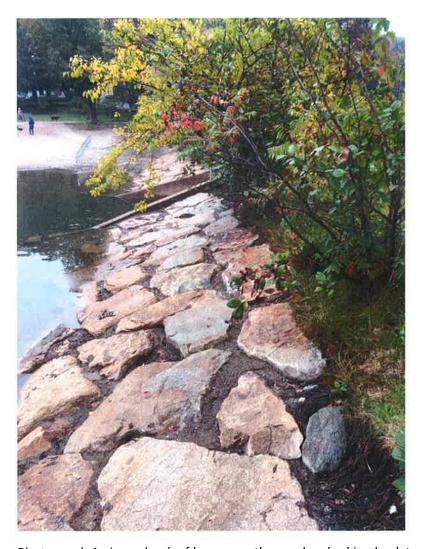
New England Hydric Soils Technical Committee, 2004, 3<sup>rd</sup> ed., Field Indicator of Identifying Hydric Soils in New England.



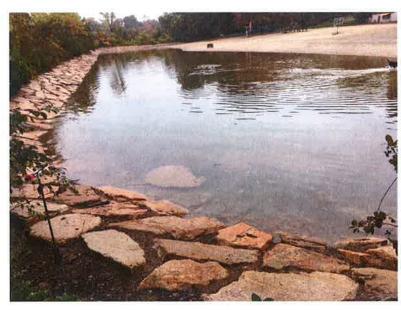
### APPENDIX A

Site Photographs





Photograph 1. Inner bank of berm, southern edge, looking back towards bathing beach.



Photograph #2. Inner bank of berm, western and northern edge, looking north.



Photograph #3. Eastern bank of bathing beach based on downgradient most limit of vegetation.



Photograph #4. Outer bank of berm. Note low water elevation.



Photograph #5. Walking path project area. Reservoir and bank to the left of path.

APPENDIX B

Figures

Wetlands Field Map



USGS Topographic Map

Environmental Resources Map



Scale In Feet

FEMA FIRM Map

# National Flood Hazard Layer FIRMette





# Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

With BFE or Depth Zone AE, AO, AH, VE, AR Regulatory Floodway SPECIAL FLOOD HAZARD AREAS 0.2% Annual Chance Flood Hazard, Area of 1% annual chance flood with average areas of less than one square mile Zone Future Conditions 1% Annual Chance Flood Hazard Zone

Area with Flood Risk due to Levee Zone D Area with Reduced Flood Risk due to

NO SCREEN Area of Minimal Flood Hazard Zone X

Effective LOMRs

Area of Undetermined Flood Hazard Zone

Channel, Culvert, or Storm Sewer

GENERAL ---- Channel, Culvert, or Storn STRUCTURES | 1111111 Levee, Dike, or Floodwall

Cross Sections with 1% Annual Chance Water Surface Elevation 17.5

Base Flood Elevation Line (BFE) Limit of Study

Coastal Transect Baseline Jurisdiction Boundary

Hydrographic Feature Profile Baseline

Digital Data Available

No Digital Data Available

The pin displayed on the map is an approximate point selected by the user and does not represe an authoritative property location.

This map complies with FEMA's standards for the use of The basemap shown complies with FEMA's basemap

authoritative NFHL web services provided by FEMA. This map reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or was exported on 10/8/2018 at 5:11:19 PM and does not The flood hazard information is derived directly from the become superseded by new data over time. This map image is void if the one or more of the following map elements do not appear. basemap imagery, flood zone labels, FIRM panel number, and FIRM effective date. Map images for legend, scale bar, map creation date, community identifiers, unmapped and unmodernized areas cannot be used for

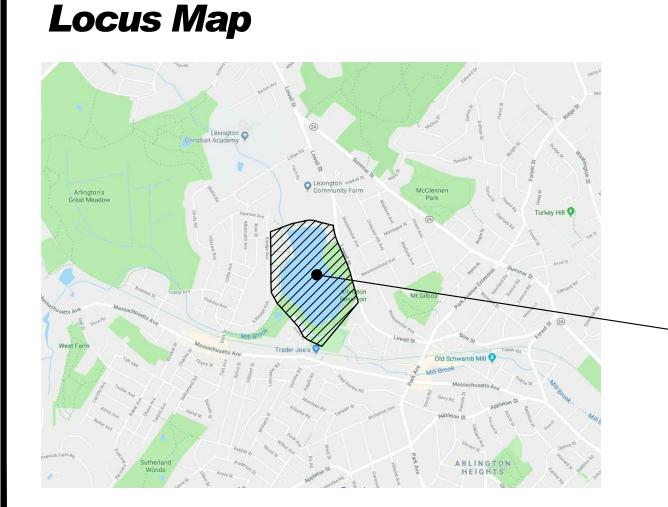
# **PLANS**



# TOWN OF ARLINGTON

# IMPROVEMENTS TO THE ARLINGTON RESERVOIR





ARLINGTON RESERVOIR 210 LOWELL ST, ARLINGTON, MA 02474 - NOI SUBMISSION -NOT FOR CONSTUCTION NOVEMBER 20, 2018

Prepared By



85 Devonshire St, 3rd Floor, Boston, MA 02109 (617) 412-4480 (800) Sampson

# SHEET INDEX

G0.01..... GENERAL NOTES
G0.02..... OVERALL PLAN

G0.03..... ENVIRONMENTAL IMPACTS PLAN

BATHING BEACH FILTRATION AND PUMP HOUSE BUILDING UPGRADES
A1.01...... PUMP HOUSE BUILDING DEMOLITION PLANS, NOTES, AND

DETAILS

A1.02..... PUMP HOUSE BUILDING OVERALL PLANS AND ELEVATIONS

SP-D-1.0..... PIPING DEMOLITION WITHIN BATHING BEACH

...... SITE LAYOUT ...... PIPING GENERAL NOTES

SP-2.0..... PROPOSED PIPING PLAN

SP-3.0..... PIPING SCHEMATIC AND EQUIPMENT LIST SP-3.1..... PIPING SCHEMATIC AND EQUIPMENT LIST (CONT.)

..... LAYOUT, MATERIALS, AND PLANTING PLAN AT EXISTING

**PUMP HOUSE** 

PERIMETER TRAIL AND SHORELINE STABILIZATION PILOT SITE

)1...... PILOT SITE EXISTING CONDITIONS PLAN, PILOT SITE PREPARATION AND DEMOLITION PLAN

2.01...... PILOT SITE LAYOUT AND MATERIALS PLAN, PILOT SITE

GRADING PLAN
L3.01..... PILOT SITE PLANTING PLAN

L4.01..... PILOT SITE CONSTRUCTION DETAILS

www.westonandsampson.com

## **GENERAL NOTES**

- 1. PROPERTY LINES, SITE SURVEY AND TOPOGRAPHICAL INFORMATION ON THE GROUND SURVEYS PERFORMED BY WESTON & SAMPSON IN DECEMBER
- 2. BEARINGS REFER TO THE MASSACHUSETTS NAD 83 STATE PLANE COORDINATE SYSTEM (MAINLAND ZONE).
- 3. ELEVATIONS REFER TO THE 1988 NORTH AMERICAN DATUM (NAVD 88)
- 4. REFER TO THE SURVEY LEGEND FOR GENERAL SYMBOLS. ALL BIDDERS ARE REQUIRED TO INSPECT THE PROJECT SITE IN ITS ENTIRETY PRIOR TO SUBMITTING THEIR BID. AND BECOME FAMILIAR WITH ALL CONDITIONS AS THEY MAY AFFECT THEIR BID. CONTRACTOR AND SUB-CONTRACTOR SHALL BE FAMILIAR WITH ALL DRAWINGS AND SPECIFICATIONS PRIOR TO COMMENCING THE CONSTRUCTION.
- 5. LOCATIONS OF ANY UTILITIES SHOWN ON THESE PLANS ARE APPROXIMATE ONLY. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF SUCH UTILITIES, PROTECTING ALL EXISTING UTILITIES AND REPAIRING ANY DAMAGE DONE DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ON-SITE COORDINATION WITH UTILITY COMPANIES AND PUBLIC AGENCIES AND FOR OBTAINING ALL REQUIRED PERMITS AND PAYING ALL REQUIRED FEES. IN ACCORDANCE WITH M.G.L. CHAPTER 82, SECTION 40, INCLUDING AMENDMENTS, CONTRACTORS SHALL NOTIFY ALL UTILITY COMPANIES AND GOVERNMENT AGENCIES IN WRITING PRIOR TO EXCAVATION. CONTRACTOR SHALL ALSO CALL "DIG SAFE" AT (888) 344-7233 NO LESS THAN 72 HOURS, (EXCLUSIVE OF WEEKENDS AND HOLIDAYS), PRIOR TO SUCH EXCAVATION. DOCUMENTATION OF REQUESTS SHALL BE PROVIDED TO OWNER'S REPRESENTATIVE PRIOR TO EXCAVATION WORK.
- 6. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR AND THE INFORMATION FURNISHED TO THE OWNER'S REPRESENTATIVE FOR RESOLUTION OF THE CONFLICT.

**DEMOLITION & SITE PREPARATION NOTES** 

- SPECIFICATIONS TO DETERMINE THE EXTENT OF EXCAVATION AND DEMOLITION REQUIRED TO RECEIVE SITE IMPROVEMENTS.
- ANY DISCREPANCIES OR CONFLICTS BETWEEN THE DRAWINGS AND EXISTING CONDITIONS, EXISTING CONDITIONS TO REMAIN, TEMPORARY CONSTRUCTION AND PERMANENT CONSTRUCTION SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE BEFORE PROCEEDING. ITEMS ENCOUNTERED IN AREAS OF EXCAVATION THAT ARE NOT INDICATED ON THE DRAWINGS, BUT ARE VISIBLE ON SURFACE, SHALL BE THE CONTRACTOR'S RESPONSIBILITY AND SHALL BE REMOVED AT NO ADDITIONAL COST TO THE OWNER.
- 9. ANY ALTERATIONS TO THESE DRAWINGS MADE IN THE FIELD DURING CONSTRUCTION SHALL BE RECORDED BY THE GENERAL CONTRACTOR ON "AS BUILT" DRAWINGS.
- 10. ALL AREAS DISTURBED BY THE CONTRACTOR'S OPERATIONS OUTSIDE THE PROJECT LIMITS, SHALL BE RESTORED TO THE ORIGINAL CONDITION BY THE 19. TREES AND STUMPS SHALL BE REMOVED AND DISPOSED COMPLETE BY CONTRACTOR AT NO ADDITIONAL COST AND TO THE SATISFACTION OF THE OWNER.
- 11. ALL WORK SHOWN ON THE PLANS AS BOLD SHALL REPRESENT PROPOSED WORK. THE TERM "PROPOSED (PROP)" INDICATES WORK TO BE CONSTRUCTED USING NEW MATERIALS.
- 12. ALL KNOWN EXISTING STATE, COUNTY AND TOWN LOCATION LINES AND PRIVATE PROPERTY LINES HAVE BEEN ESTABLISHED FROM AVAILABLE INFORMATION AND ARE INDICATED ON THE PLANS.
- 13. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THEIR EMPLOYEES, AS WELL AS PUBLIC USERS FROM INJURY DURING THE ENTIRE CONSTRUCTION PERIOD USING ALL NECESSARY SAFEGUARDS, INCLUDING BUT NOT LIMITED TO, THE ERECTION OF TEMPORARY WALKS, STRUCTURES, PROTECTIVE BARRIERS, COVERING, OR FENCES AS NEEDED.
- 14. THE CONTRACTOR SHALL SUPPLY THE OWNER WITH THE NAME OF THE OSHA "COMPETENT PERSON" PRIOR TO CONSTRUCTION.

- . CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING ALL DRAWINGS AND 15. FILLING OF EXCAVATED AREAS SHALL NOT TAKE PLACE WITHOUT THE PRESENCE OR PERMISSION OF THE OWNER.
  - 16. EXISTING TREES TO REMAIN SHALL BE PROTECTED FROM CONSTRUCTION ACTIVITIES. NO STOCKPILING OF MATERIAL, EQUIPMENT OR VEHICULAR TRAFFIC SHALL BE ALLOWED WITHIN THE DRIP LINE OF TREES TO REMAIN. NO GUYS SHALL BE ATTACHED TO ANY TREE TO REMAIN. WHEN NECESSARY OR AS DIRECTED BY THE OWNER'S REPRESENTATIVE, THE CONTRACTOR SHALL ERECT TEMPORARY BARRIERS FOR THE PROTECTION OF EXISTING TREES DURING CONSTRUCTION.
  - 17. TREES AND SHRUBS WITHIN THE LIMITS OF WORK SHALL BE REMOVED ONLY UPON THE APPROVAL OF THE OWNER'S REPRESENTATIVE OR AS NOTED ON THE PLANS.
  - 18. NO FILLING SHALL OCCUR AROUND EXISTING TREES TO REMAIN WITHOUT THE APPROVAL OF THE OWNER OR OWNER REPRESENTATIVE.
  - CONTRACTOR.
  - 20. ALL UNSUITABLE UNCONTAMINATED EXCESS SOIL FROM CONSTRUCTION ACTIVITIES SHALL BE DISPOSED OF BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE TOWN. REMOVAL ACTIVITIES SHALL BE ACCORDANCE WITH STATE AND LOCAL REGULATIONS AT NO ADDITIONAL COST TO THE TOWN.
  - 21. CONTRACTOR IS RESPONSIBLE FOR STAKING CONSTRUCTION BASELINES IN FIELD WITH A MA. REGISTERED PROFESSIONAL LAND SURVEYOR. NO CONSTRUCTION WILL BE PERFORMED WITHOUT THE PROPOSED BASELINES AND LAYOUTS APPROVED BY THE OWNER'S REPRESENTATIVE.
  - 22. NO FILL SHALL CONTAIN HAZARDOUS MATERIALS.
  - 23. CONTRACTOR SHALL PROVIDE TEMPORARY CONSTRUCTION FENCING IN THE LOCATIONS SHOWN ON THE PLANS.
  - 24. ANY QUANTITIES SHOWN ON PLANS ARE FOR COMPARATIVE BIDDING PURPOSES ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VISIT THE PROJECT SITE TO VERIFY ALL QUANTITIES AND CONDITIONS PRIOR TO

#### SUBMITTING BID.

- 25. CONTRACTOR'S STAGING AREA MUST BE IN AREAS APPROVED BY OWNER. ANY OTHER AREAS THAT THE CONTRACTOR MAY WISH TO USE FOR STAGING MUST BE COORDINATED WITH THE OWNER
- 26. CONTRACTOR SHALL COORDINATE ALL WORK WITH THE OWNER
- 27. THE LIMIT OF WORK SHALL BE DELINEATED IN THE FIELD PRIOR TO THE START OF SITE CLEARING OR CONSTRUCTION AND AGREED UPON WITH THE OWNER'S REPRESENTATIVE.
- 28. HAULING OF EARTH MATERIALS TO AND FROM THE SITE SHALL BE RESTRICTED TO THE HOURS OF 7 AM TO 5 PM.
- 29. ANY BOULDERS 3 CY OR SMALLER SHALL BE CONSIDERED UNDOCUMENTED FILL AND SHALL BE DISPOSED OF AT NO ADDITIONAL COST TO THE TOWN.
- 30. WORK ON WEEKENDS SHALL ONLY BE CONDUCTED IF PRIOR WRITTEN PERMISSION IS PROVIDED BY THE TOWN.
- 31. NO TRUCKS LEFT IDLING ON TOWN STREETS DURING CONSTRUCTION. CONSTRUCTION TRAFFIC AT NO TIME SHALL IMPEDE FLOW OF RESIDENT TRAFFIC.

210 LOWELL ST,

ARLINGTON, MA 02474

**IMPROVEMENTS TO THE ARLINGTON RESERVOIR** 

85 Devonshire Street, 3rd Floor, Boston, MA 02109 617-412-4480 800.SAMPSON www.westonandsampson.com

Consultants:

Ι.			
	Rev	isions:	
	No.	Date	Description

ssued For: NOI SUBMISSION

NOT FOR CONSTRUCTION

2160784

Date: 11/20/2018 MES Drawn By:

Reviewed By: Approved By:

W&S Project No:

W&S File No:

Drawing Title:

GENERAL NOTES

Sheet Number:

- 1. THE CONTRACTOR SHALL INCLUDE IN THE BID THE COST OF REMOVING ANY EXISTING SITE FEATURES AND APPURTENANCES NECESSARY TO ACCOMPLISH THE CONSTRUCTION OF THE PROPOSED SITE IMPROVEMENTS. THE CONTRACTOR SHALL ALSO INCLUDE IN THE BID THE COST NECESSARY TO RESTORE SUCH ITEMS IF THEY ARE SCHEDULED TO REMAIN AS PART OF THE FINAL SITE IMPROVEMENTS. REFER TO PLANS TO DETERMINE EXCAVATION AND DEMOLITION REQUIREMENTS AND TO DETERMINE THE LOCATION OF THE PROPOSED SITE IMPROVEMENTS.
- 2. THE OWNER RESERVES THE RIGHT TO REVIEW ALL MATERIALS DESIGNATED FOR REMOVAL AND TO RETAIN OWNERSHIP OF SUCH MATERIALS. IF THE OWNER RETAINS ANY MATERIAL THE CONTRACTOR SHALL MAKE ARRANGEMENTS WITH THE OWNER TO HAVE THOSE MATERIALS REMOVED OFF SITE TO A DESIGNATED MUNICIPAL PROPERTY AT NO ADDITIONAL COST. ALL GEOTECHNICALLY OR UNSUITABLE UNCONTAMINATED EXCESS SOIL FROM CONSTRUCTION ACTIVITIES SHALL BE DISPOSED OF BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE TOWN, REMOVAL ACTIVITIES SHALL BE ACCORDANCE WITH STATE AND LOCAL REGULATIONS AT NO ADDITIONAL COST TO THE TOWN.
- 3. UNLESS SPECIFICALLY NOTED TO BE REMOVED AND STOCKPILED (R&S) OR REUSED AND RELOCATED (R&R), ALL SITE FEATURES CALLED TO BE REMOVED AND DEMOLISHED (R&D) SHALL BE REMOVED WITH THEIR FOOTINGS, ATTACHMENTS, BASE MATERIAL, ETC. TRANSPORTED FROM THE SITE TO BE DISPOSED OF IN A LAWFUL MANNER AT AN ACCEPTABLE DISPOSAL SITE AND AT NO ADDITIONAL COST TO THE OWNER.
- 4. ALL EXISTING SITE FEATURES TO REMAIN SHALL BE PROTECTED THROUGHOUT THE CONSTRUCTION PERIOD. ANY FEATURES DAMAGED DURING CONSTRUCTION OPERATIONS SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER AND/OR OWNER'S REPRESENTATIVE AT NO ADDITIONAL COST.
- 5. DURING EARTHWORK OPERATIONS, CONTRACTOR SHALL TAKE CARE TO NOT DISTURB EXISTING MATERIALS TO REMAIN, OUTSIDE THE LIMITS OF EXCAVATION AND BACKFILL AND SHALL TAKE WHATEVER MEASURES NECESSARY, AT THE CONTRACTOR'S EXPENSE, TO PREVENT ANY EXCAVATED MATERIAL FROM COLLAPSING. ALL BACKFILL MATERIALS SHALL BE PLACED AND COMPACTED AS SPECIFIED TO THE SUBGRADE REQUIRED FOR THE INSTALLATION OF THE REMAINDER OF THE CONTRACT WORK.
- 6. THE CONTRACTOR SHALL PROTECT EXISTING TREES TO REMAIN. CONTRACTOR SHALL TAKE DUE CARE TO PREVENT INJURY TO TREES DURING CLEARING OPERATIONS.
- 7. THE STORAGE OF MATERIALS AND EQUIPMENT WILL BE PERMITTED AT LOCATIONS DESIGNATED BY OWNER OR OWNER'S REPRESENTATIVE. PROTECTION OF STORED MATERIALS AND EQUIPMENT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

# EROSION AND SEDIMENT CONTROL NOTES

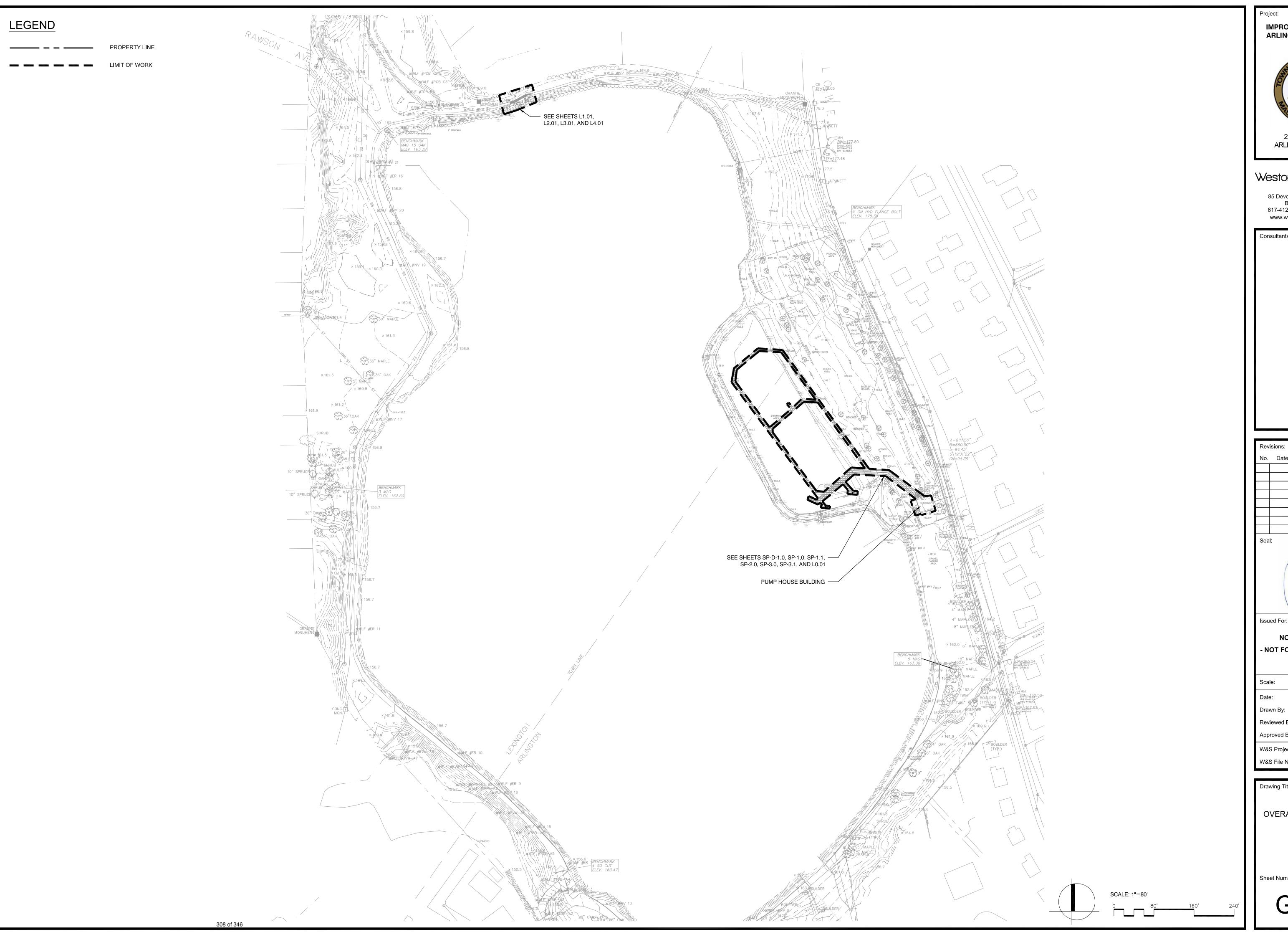
- ALL SEDIMENT AND EROSION CONTROL DEVICES SHALL BE PUT INTO PLACE PRIOR TO BEGINNING ANY CONSTRUCTION OR DEMOLITION. REFER TO PLANS FOR APPROXIMATE LOCATION OF EROSION AND SEDIMENT CONTROL. REFER TO SPECS AND DETAILS FOR TYPE OF EROSION AND SEDIMENT CONTROL.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTINUAL MAINTENANCE OF ALL CONTROL DEVICES THROUGHOUT THE DURATION OF THE PROJECT.
- CONTRACTOR SHALL MEET ALL OF THE STATE OF MASSACHUSETTS, THE TOWN OF ARLINGTON, AND THE TOWN OF LEXINGTON WETLAND ORDINANCE REGULATIONS FOR SEDIMENT AND EROSION CONTROL AND COMPLY WITH THE ORDER OF CONDITIONS.
- EXCAVATED MATERIAL STOCKPILED ON THE SITE SHALL BE SURROUNDED BY A RING OF UNBROKEN SEDIMENT AND EROSION CONTROL FENCE. THE LIMITS OF ALL GRADING AND DISTURBANCE SHALL BE KEPT TO A MINIMUM WITHIN THE APPROVED AREA OF CONSTRUCTION. ALL AREAS OUTSIDE OF THE LIMIT OF CONTRACT SHALL REMAIN TOTALLY UNDISTURBED UNLESS OTHERWISE APPROVED BY OWNER'S REPRESENTATIVE.
- EROSION CONTROL BARRIERS TO BE INSTALLED AT THE TOE OF SLOPES. SEE GRADING & DRAINAGE PLANS, NOTES, DETAILS AND SPECIFICATIONS.
- THE CONTRACTOR SHALL PROVIDE DUST CONTROL FOR CONSTRUCTION OPERATIONS AS APPROVED BY THE OWNER'S REPRESENTATIVE AND MASSACHUSETTS D.E.P. REQUIREMENTS.
- ALL POINTS OF CONSTRUCTION EGRESS OR INGRESS SHALL BE MAINTAINED TO PREVENT TRACKING OR FLOWING OF SEDIMENT ON TO PUBLIC ROADS AND
- ALL MATERIAL HAULING VEHICLES SHALL BE COMPLETELY COVERED PRIOR TO LEAVING THE SITE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR WHEEL CLEANING OF ALL CONSTRUCTION VEHICLES PRIOR TO EXITING THE SITE. CONTRACTOR SHALL ENSURE THAT MATERIAL HAULING VEHICLES REMAIN ON PAVED SURFACES AS MUCH AS POSSIBLE

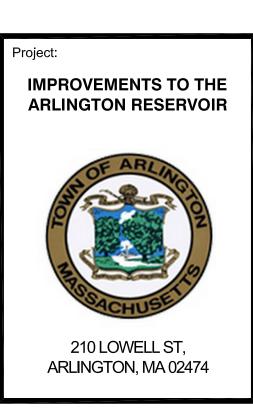
# LAYOUT NOTES

- 1. COORDINATE ALL LAYOUT ACTIVITIES WITH THE SCOPE OF WORK CALLED FOR BY DEMOLITION, GRADING AND UTILITIES OPERATIONS ENCOMPASSED BY THIS CONTRACT. SET, PROTECT AND REPLACE REFERENCE STAKES AS NECESSARY OR AS REQUIRED BY THE OWNER'S REPRESENTATIVE.
- 2. THE LAYOUT OF SITE AMENITIES AND FENCES MUST BE APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
- ALL PROPOSED SITE FEATURES SHALL BE LAID OUT AND STAKED FOR REVIEW AND APPROVAL BY THE OWNER'S REPRESENTATIVE PRIOR TO COMMENCEMENT OF INSTALLATION. ANY REQUIRED ADJUSTMENTS TO THE LAYOUT SHALL BE UNDERTAKEN AS DIRECTED, AT NO ADDITIONAL COST TO THE OWNER.
- 4. ALL PROPOSED PAVEMENTS SHALL MEET THE LINE AND GRADE OF EXISTING ADJACENT PAVEMENT SURFACES AND SHALL BE TREATED WITH AN RS-1 TACK COAT AT POINT OF CONNECTION. ALL PATHWAY WIDTHS SHALL BE AS NOTED ON THE LAYOUT AND MATERIALS PLAN.
- 5. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND GRADES ON THE GROUND AND REPORT ANY DISCREPANCIES IMMEDIATELY TO THE OWNER.
- 6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD MEASUREMENTS OF ALL PROPOSED FENCES, GATES.

# **GRADING AND DRAINAGE NOTES**

- ALL WORK RELATING TO INSTALLATION, RENOVATION OR MODIFICATION OF DRAINAGE SERVICES SHALL BE PERFORMED IN ACCORDANCE WITH THE STANDARDS OF THE TOWN OF ARLINGTON AND ITS DEPARTMENT OF PUBLIC WORKS.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, GRADES AND INVERT ELEVATIONS IN THE FIELD AND REPORT ANY DISCREPANCIES IMMEDIATELY TO THE OWNER AND OWNER'S REPRESENTATIVE.
- 3. ALL NEW WALKWAYS MUST CONFORM TO CURRENT AMERICANS WITH DISABILITIES ACT (ADA) REGULATIONS: WALKWAYS SHALL MAINTAIN A CROSS PITCH OF NOT MORE THAN ONE AND A HALF (1.5%) PERCENT MAXIMUM AND THE RUNNING SLOPE (PARALLEL TO THE DIRECTION OF TRAVEL) OF 4.5% MAXIMUM. MINIMUM SLOPE ON ALL WALKWAYS WILL BE 1:100 OR ONE (1%) PERCENT TO PROVIDE POSITIVE DRAINAGE. ANY DISCREPANCIES NOT ALLOWING THIS TO OCCUR SHALL BE REPORTED TO THE OWNER'S REPRESENTATIVE PRIOR TO CONTINUING WORK.
- 4. ALL UTILITY GRATES, COVERS OR OTHER SURFACE ELEMENTS INTENDED TO BE EXPOSED AT GRADE SHALL BE FLUSH WITH THE ADJACENT FINISHED GRADE AND ADJUSTED TO PROVIDE A SMOOTH TRANSITION AT ALL EDGES.
- THE CONTRACTOR SHALL SET SUBGRADE ELEVATIONS TO ALLOW FOR POSITIVE DRAINAGE AND PROVIDE EROSION CONTROL DEVICES. STRUCTURES, MATERIALS AND CONSTRUCTION METHODS TO DIRECT SILT MIGRATION AWAY FROM DRAINAGE AND OTHER UTILITY SYSTEMS, PUBLIC STREETS AND WORK AREAS. CLEAN BASINS REGULARLY AND AT THE END OF THE PROJECT.
- 6. CONTRACTOR SHALL ENSURE ALL AREAS ARE PROPERLY PITCHED TO DRAIN. WITH NO SURFACE WATER PONDING OR PUDDLING.
- 7. EXCAVATION REQUIRED WITHIN PROXIMITY OF KNOWN EXISTING UTILITY LINES SHALL BE DONE BY HAND. CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING UTILITY LINES OR STRUCTURES INCURRED DURING CONSTRUCTION OPERATIONS AT NO COST TO THE OWNER.
- 8. WHERE NEW EARTHWORK MEETS EXISTING EARTHWORK, CONTRACTOR SHALL BLEND NEW EARTHWORK SMOOTHLY INTO EXISTING, PROVIDING VERTICAL CURVES OR POUNDS AT ALL TOP AND BOTTOM OF SLOPES.
- 9. WHERE A SPECIFIC LIMIT OF WORK LINE IS NOT OBVIOUS OR IMPLIED, BLEND GRADES TO EXISTING CONDITIONS WITHIN 5 FEET OF PROPOSED CONTOURS.
- 10. RESTORE ALL DISTURBED AREAS AND LIMITS OF ALL REMOVALS TO LOAM AND CONSERVATION SEED MIX UNLESS OTHERWISE NOTED.
- 11. WHERE NEW IMPROVEMENTS MEET EXISTING CONDITIONS, MEET LINE AND GRADE OF EXISTING ADJACENT PAVEMENTS, TYPICAL.





Weston & Sampson

85 Devonshire Street, 3rd Floor, Boston, MA 02109 617-412-4480 800.SAMPSON www.westonandsampson.com

Consultants:		

No.	Date	Description
Sea	Minimum Minimu	CANDSCAPE IN THE CONTROL OF THE CONT

Issued For:

NOI SUBMISSION - NOT FOR CONSTRUCTION -

11/20/2018

Reviewed By:

Approved By:

W&S Project No:

Drawing Title:

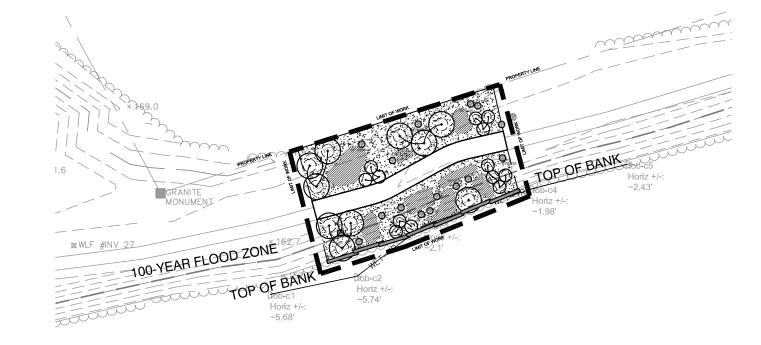
OVERALL PLAN

Sheet Number:

# LEGEND

PROPERTY LINE LIMIT OF WORK 100-YEAR FLOOD ZONE 100-' WETLAND BUFFER

TOP OF BANK

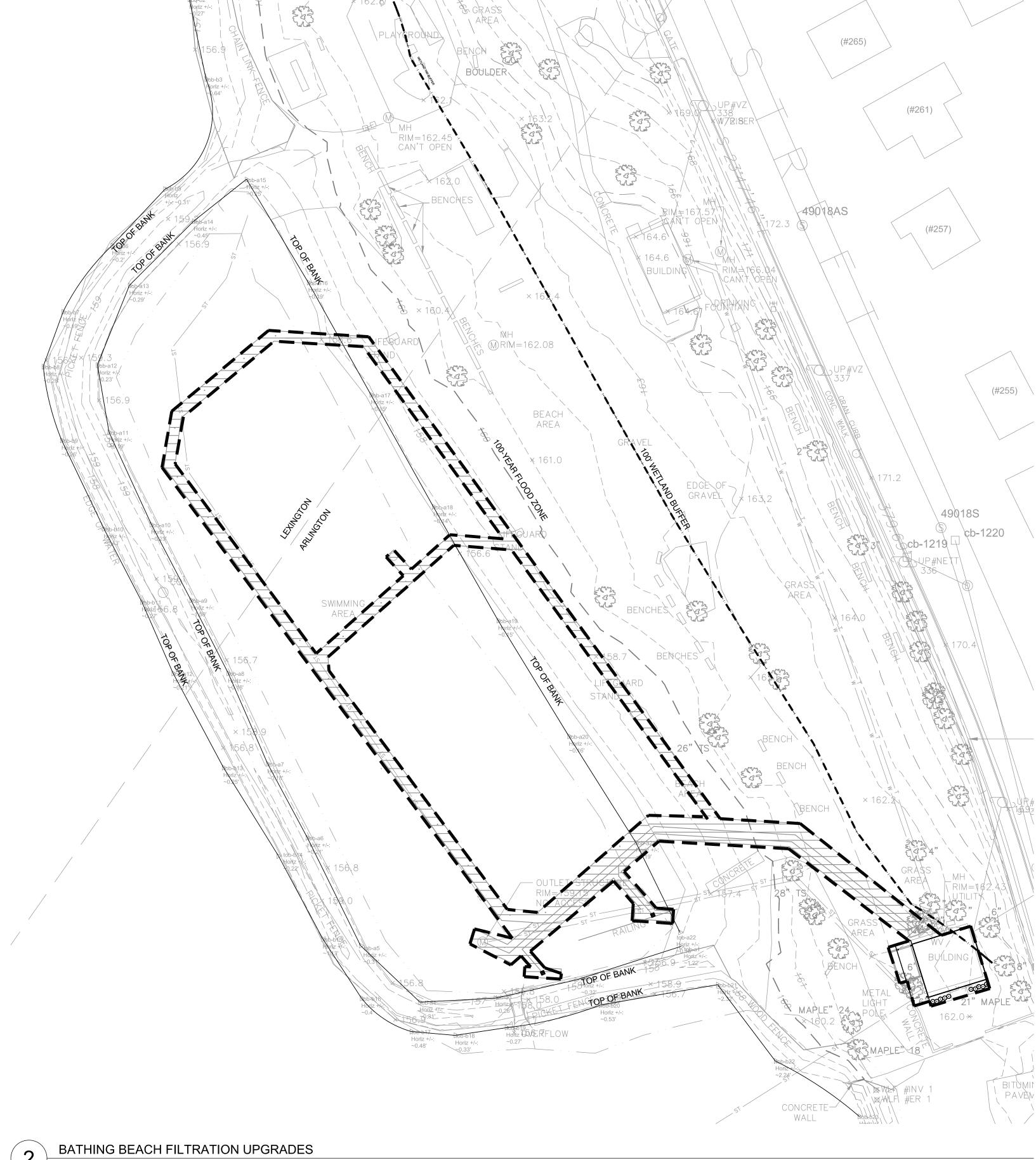




PERIMETER TRAIL AND SHORELINE STABILIZATION PILOT

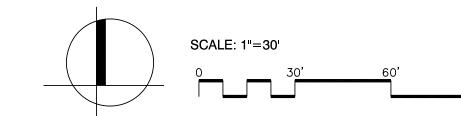
SCALE: 1" = 30'-0"

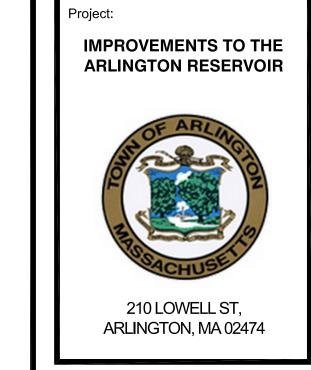
AREAS OF IMPACT				
	ARLINGTON	LEXINGTON	ENTIRE PROJECT	
BANK (LINEAR FEET)	17	70	87	
LAND UNDER WATER (SQUARE FEET)	3,166	1,010	4,196	
100-YEAR FLOOD ZONE (SQUARE FEET)	2,157	225	2,382	



BATHING BEACH FILTRATION UPGRADES

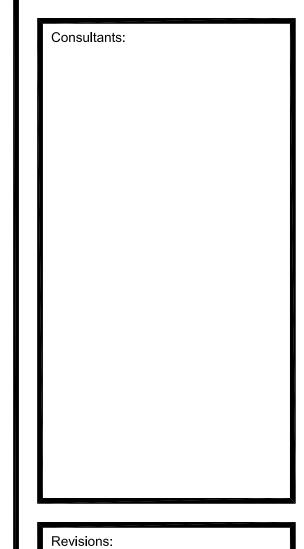
SCALE: 1" = 30'-0"





Weston & Sampson

85 Devonshire Street, 3rd Floor, Boston, MA 02109 617-412-4480 800.SAMPSON www.westonandsampson.com



Sea	T: "Himming manufactures of the control of the cont	SACHUSE SON TO SERVICE SACHUSE SACHUS SACHUSE SACHUS SACHUSE SACHUSE SACHUSE SACHUSE SACHUSE SACHUSE SACHUSE S
Issu	ied For:	
- N		SUBMISSION CONSTRUCTION -

Description

No. Date

Scale:	
Date:	11/20/20
	МЕС

Reviewed By: Approved By:

W&S Project No:

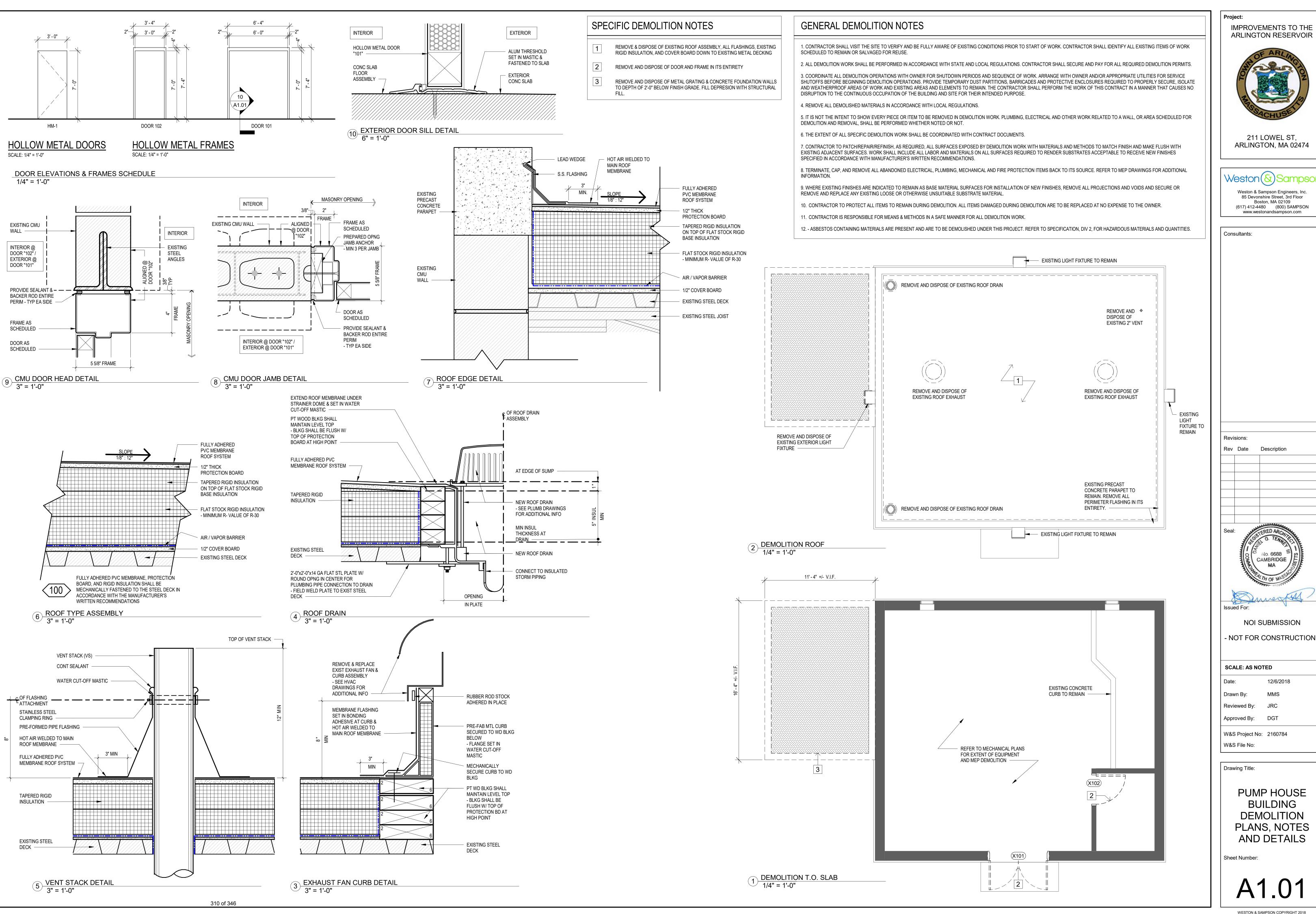
Drawing Title:

ENVIRONMENTAL IMPACTSPLAN

Sheet Number:

309 of 346

COPYRIGHT 2016 WESTON & SAMPSON



**IMPROVEMENTS TO THE** ARLINGTON RESERVOIR



211 LOWEL ST, ARLINGTON. MA 02474

Weston & Sampson Engineers, Inc. 85 Devonshire Street, 3rd Floor Boston, MA 02109 (617) 412-4480 (800) SAMPSON www.westonandsampson.com

CAMBRIDGE

NOI SUBMISSION

**SCALE: AS NOTED** 12/6/2018 Drawn By: Reviewed By:

W&S Project No: 2160784

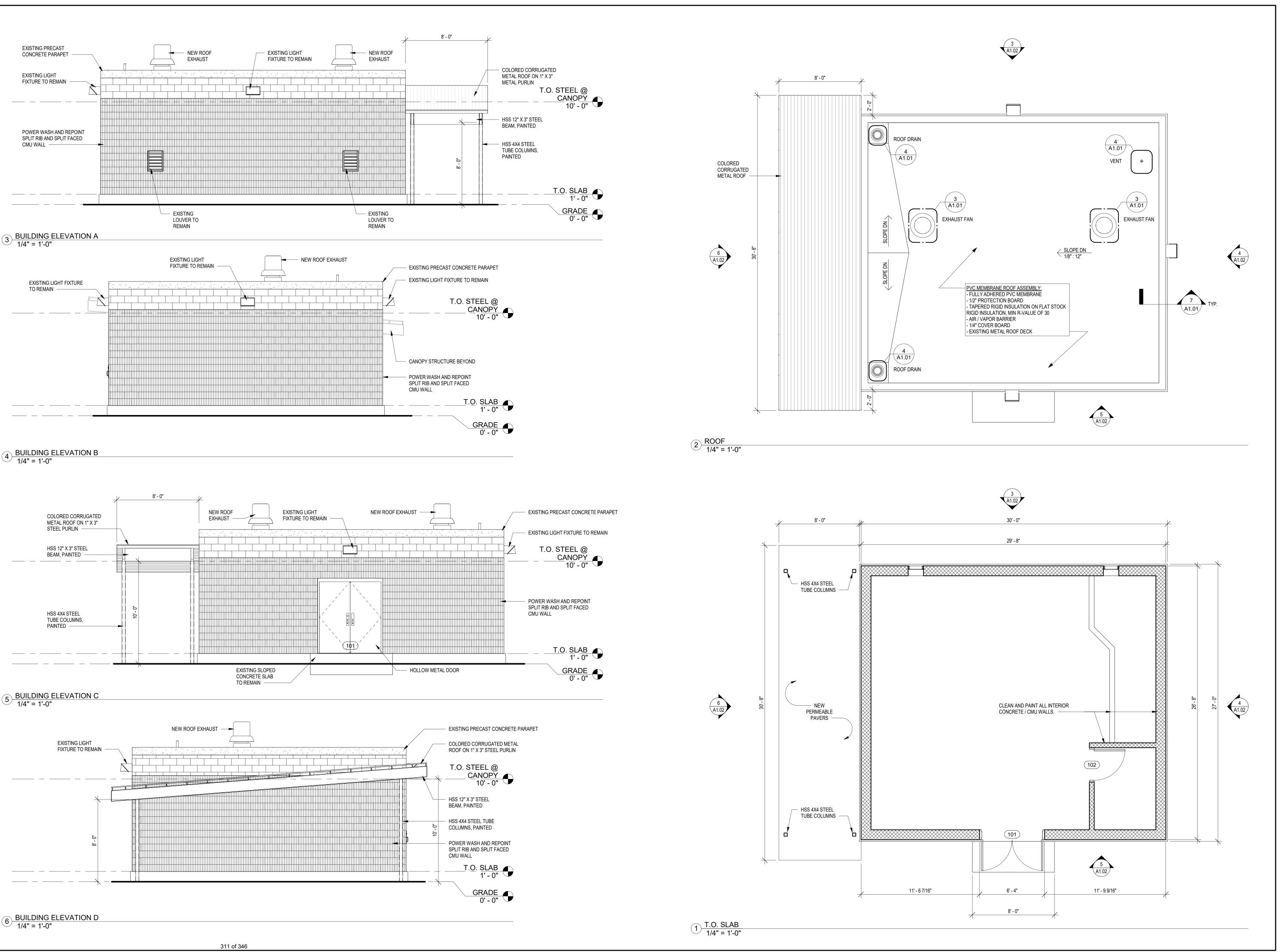
Drawing Title:

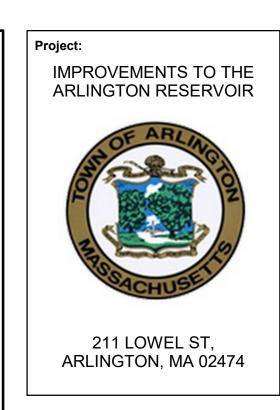
**PUMP HOUSE** BUILDING **DEMOLITION** PLANS, NOTES

AND DETAILS

Sheet Number:

WESTON & SAMPSON COPYRIGHT 2018





Weston Sampson Engineers, Inc.
85 Devonshire Street, 3rd Floor
Boston, MA 02109
(617) 412-4480 (800) SAMPSON
www.westonandsampson.com

Revisions:

Rev Date Description

Seal:

Seal:

Rev Date Description

Issued For:

NOI SUBMISSION
- NOT FOR CONSTRUCTION

Date: 12/6/2018

Drawn By: MMS

Approved By: DGT

W&S Project No: 2160784

W&S File No:

Drawing Title:

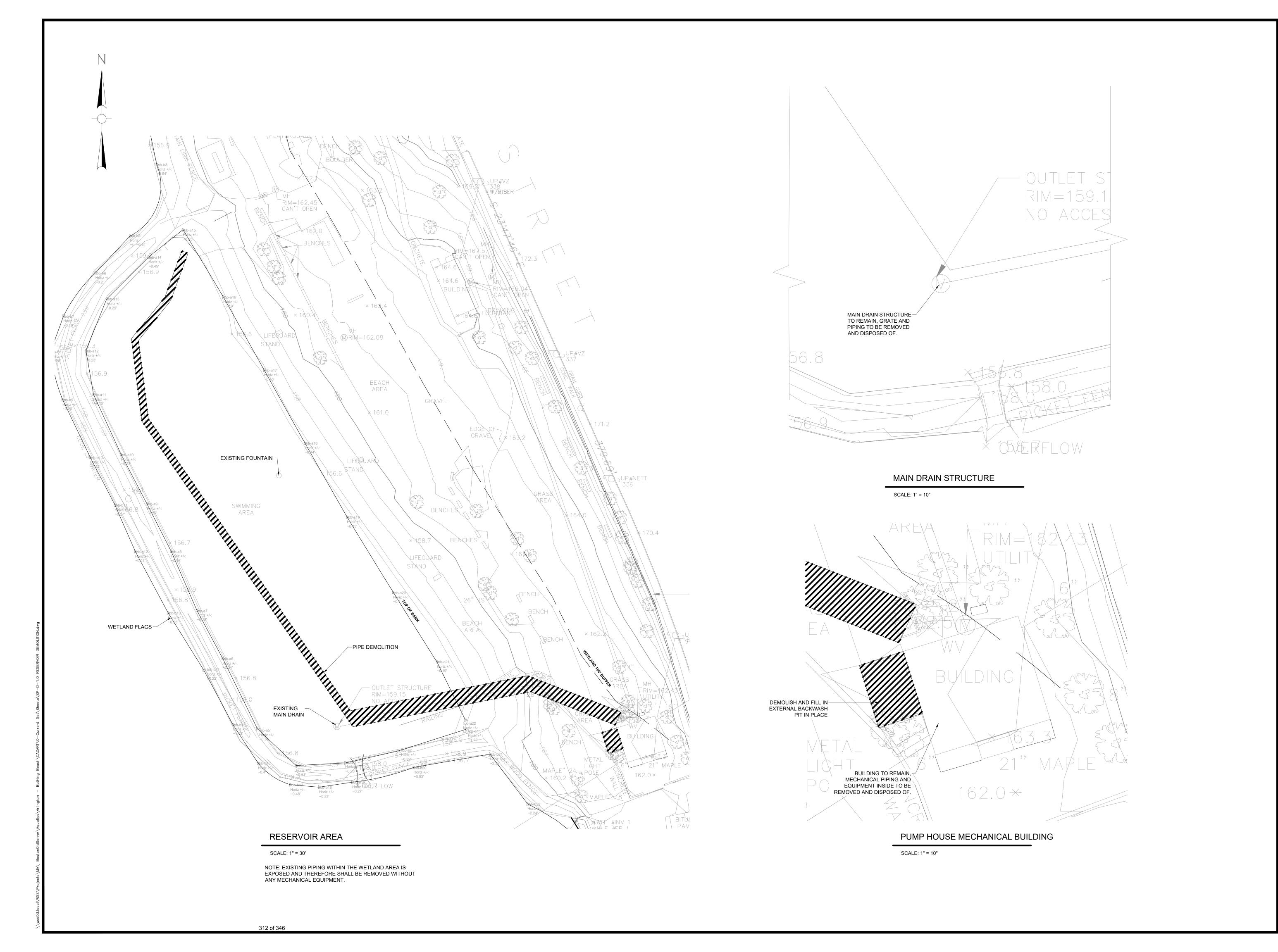
Reviewed By:

PUMP HOUSE BUILDING OVERALL PLANS AND ELEVATIONS

Sheet Number:

A1.02

WESTON & SAMPSON COPYRIGHT 2018



Project:

IMPROVEMENTS TO THE ARLINGTON RESERVOIR

210 LOWELL ST, ARLINGTON, MA 02474

# Weston & Sampson

85 Devonshire Street, 3rd Floor, Boston, MA 02109 617-412-4480 800.SAMPSON www.westonandsampson.com

Consultants:

Revi	isions:	
No.	Date	Description

JEFFERY F.
BUDROW
CIVIL
No. 35265
CONALENGE

Issued For:

NOI SUBMISSION
- NOT FOR CONSTRUCTION

Date: 11/20/2018

Drawn By: MES

Reviewed By:

Approved By:
W&S Project No:

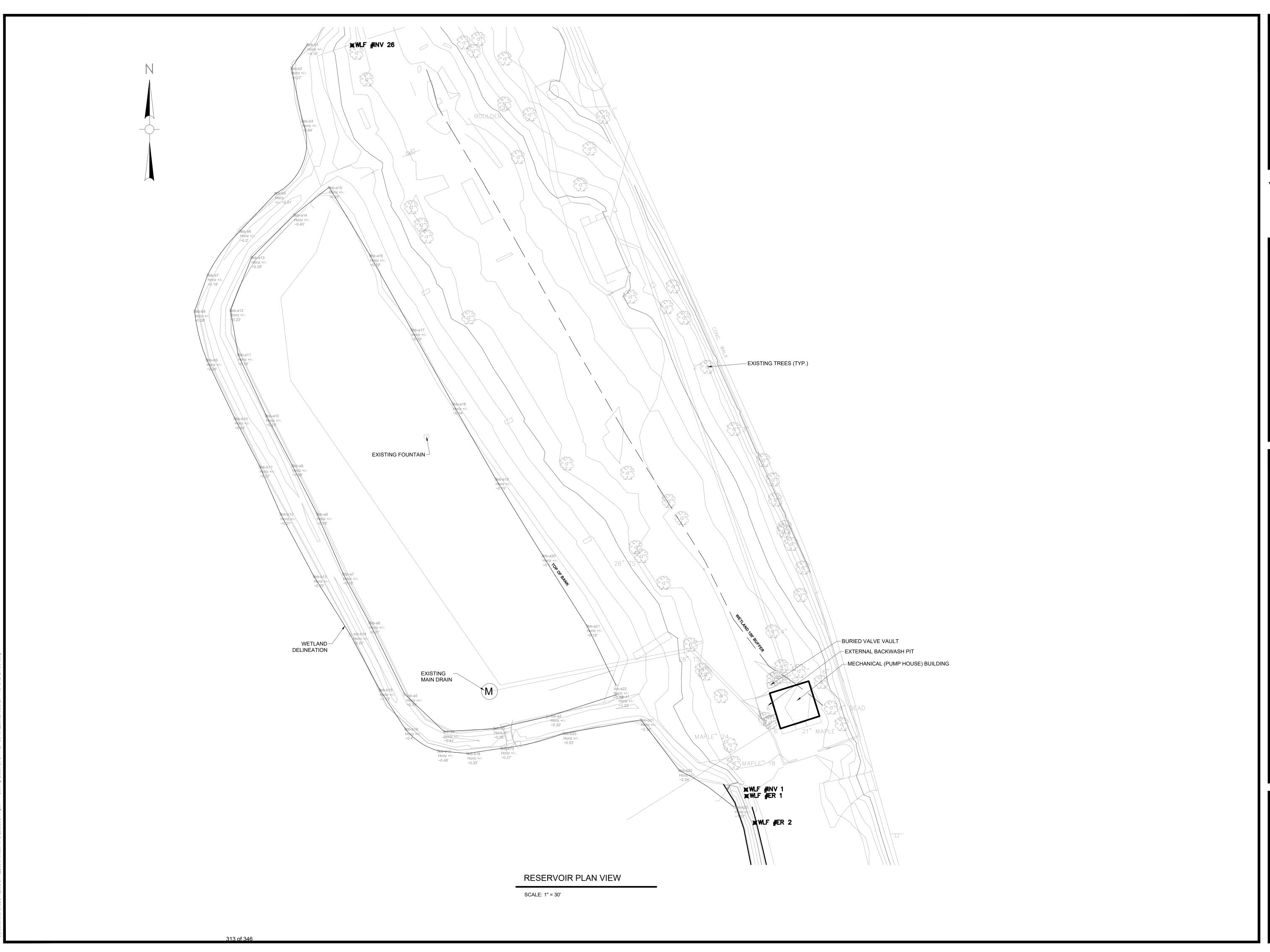
W&S File No:

Drawing Title:

RESERVOIR SITE DEMOLITION

Sheet Numb

SP-D-1.0



IMPROVEMENTS TO THE ARLINGTON RESERVOIR

Weston & Sampson

210 LOWELL ST, ARLINGTON, MA 02474

85 Devonshire Street, 3rd Floor, Boston, MA 02109 617-412-4480 800.SAMPSON www.westonandsampson.com

Consultants:		

NO.	Date	Description
Sea	al:	JEFFERY F. BUDROW CIVIL NO. 35265  GISTERS SONALENS

Issued For:

NOI SUBMISSION
- NOT FOR CONSTRUCTION -

Date: 11/20/2018

Drawn By: MES

Reviewed By:

Approved By:

W&S Project No:

&S Project No: 2160

&S File No:

Drawing Title:

SITE LAYOUT

Sheet Numbe

SP-1.0

#### **DESIGN CODE COMPLIANCE:**

NATIONAL ELECTRICAL CODE(NFPA 70)	2011
MASSACHUSETTS BUILDING CODE - 9TH EDITION	
248 CMR 10, MASSACHUSETTS FUEL GAS AND PLUMBING CODE	2017
527 CMR 12, MASSACHUSETTS ELECTRICAL CODE	2017
VIRGINIA GRAEME BAKER POOL AND SPA SAFETY ACT	2008
AMERICAN NATIONAL STANDARDS FOR PUBLIC POOLS - ANSI/NSPI-1	2014
105 CMR 435.00 MASSACHUSETTS MINIMUM STANDARDS FOR SWIMMING POOLS	31998

#### **ENGINEER SEAL:**

- THESE DRAWINGS HAVE BEEN PREPARED FOR EXCLUSIVE USE FOR THE CLIENT AND ARE NOT INTENDED FOR ANY OTHER PURPOSE. TO THE BEST OF MY KNOWLEDGE, THESE DRAWINGS MEET THE REQUIREMENTS SET FORTH BY THE MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH (DOH).
- THE FILTRATION AND RECIRCULATION SYSTEM THAT IS INCORPORATED INTO THESE DRAWINGS MUST BE CONSTRUCTED IN STRICT ACCORDANCE WITH THE APPROVED DRAWINGS. ALL CHANGES MUST HAVE WRITTEN APPROVAL FROM WESTON & SAMPSON PRIOR TO SUCH CHANGE OR ALTERATION BEING IMPLEMENTED.
- ONLY DRAWINGS FROM WESTON & SAMPSON THAT ARE MARKED "FOR CONSTRUCTION" AND WITH THE DOH APPROVAL NUMBERS AND APPROVAL DATES AFFIXED SHALL BE USED FOR THE FILTRATION AND RECIRCULATION SYSTEM CONSTRUCTION IMPLEMENTATION.
- THE ENGINEER SEAL AFFIXED TO THESE DRAWINGS IS LIMITED TO HYDRAULICS AND DOH COMPLIANCE ONLY.

#### **GENERAL CONSTRUCTION REQUIREMENTS:**

- CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE FILLING OF THE SWIMMING AREA, BALANCING THE WATER, AND STARTING UP THE EQUIPMENT, UNTIL FORMAL ACCEPTANCE BY OWNER.
- CONTRACTOR SHALL PROVIDE DETAIL INSTRUCTIONS ON OPERATING THE EQUIPMENT, AND SHALL VIDEO TAPE THE ENTIRE TRAINING SESSION.

#### **COORDINATION NOTES:**

- THE SWIMMING AREA CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF THE FOLLOWING ISSUES WITH THE GENERAL CONTRACTOR;
- DRAINAGE OF MECHANICAL ROOM.
- WASTE WATER REMOVAL FROM EQUIPMENT ROOM SHALL DISCHARGE TO TOWN WASTE
- CONNECT ALL METALLIC ITEMS FOUND WITHIN THE BOUNDS OF THE EQUIPMENT BOND, INTO THE EQUIPOTENTIAL BOND.

FAILURE TO COORDINATE THESE ISSUES CAN RESULT IN SIGNIFICANT DOH PENALTIES UPON COMPLETION OF THE PROJECT.

#### **ELECTRIC:**

- ALL CONDUITS SHALL BE PVC.
- ALL WIRING INSIDE THE FILTRATION SYSTEM EQUIPMENT AREA ROOM OR ENCLOSURE SHALL BE ENCASED IN APPROVED RIGID PVC CONDUIT.
- ALL ELECTRICAL WORK (GFI'S, TRANSFORMERS, GROUNDING, ETC.) SHALL BE PROVIDED BY THE CONTRACTOR.
- ALL ELECTRICAL EQUIPMENT AND INSTALLATIONS INCLUDING GROUNDING OF METAL EQUIPMENT ARE TO MEET OR EXCEED THE NATIONAL ELECTRICAL CODE, LATEST EDITION. ELECTRICALLY BOND AND GROUND EACH METALLIC DEVICE WITH A #8 SOLID COPPER "THWN" INSULATED GROUND WIRE IN ACCORDANCE WITH THE NEC REQUIREMENTS (AS WELL AS LOCAL CODES) APPLY SCOTCHCAST #2135 POTTING KIT (BY 3M) AT EACH GROUNDING LUG, EQUIPMENT ATTACHMENT, AND REBAR JUNCTURE. ALL GROUND WIRES SHALL BE HIDDEN OR DISGUISED.

#### PIPING INSTALLATION REQUIREMENTS:

- ALL PIPING SHALL BE SCHEDULE 80 PVC UNLESS NOTED OTHERWISE. ALL PIPING SHALL BE STAMPED WITH THE MANUFACTURER'S MARKING THAT IT IS APPROVED FOR USE WITH POTABLE WATER (NSF-PW). PLASTIC PIPE EXPOSED TO SUNLIGHT SHALL BE COATED WITH EPOXY PAINT FOR UV
- 2. THE PIPING DIAGRAMS AND SIZES SHOWN IN THESE DRAWINGS SHALL BE FOLLOWED WITHOUT EXCEPTION UNLESS WRITTEN AUTHORIZATION FROM THIS ENGINEER IS PROVIDED.
- 3. THE PIPING SYSTEMS INDICATED IN THESE DRAWINGS ARE SHOWN IN A DIAGRAMMATIC VIEW ONLY. THE CONTRACTOR SHALL PROVIDE ALL PIPING AND FITTINGS REQUIRED FOR THE COMPLETE INSTALLATION.
- 4. THE CONTRACTOR SHALL PROVIDE AND COMPLY WITH ALL PIPING INSPECTIONS THAT MAY BE REQUIRED BY ENGINEER AND OWNER.
- 5. THE CONTRACTOR SHALL PROVIDE PIPE HANGER DETAILS TO THE ENGINEER FOR WRITTEN APPROVAL PRIOR TO THE INSTALLATION.
- PIPING PRESSURE TESTING SHALL BE COORDINATED BY THE SWIMMING AREA CONTRACTOR AND SHALL BE INCLUDED IN THE COST. THE ENGINEER SHALL BE ONSITE DURING PRESSURE TESTING. ALL PIPING SHALL CONFORM TO ACCEPTED WORKMANSHIP STANDARDS AND SHALL BE TESTED AS
- 10. ALL PIPING MUST BE TESTED BY MEANS OF WATER PRESSURE.
- 11. GRAVITY PIPING SHALL BE TESTED TO 10 PSI.
  - a. GRAVITY PIPING SHALL BE DEFINED AS DRAINAGE PIPING OR SENSING PIPING, OR ANY PIPING WHICH SHALL NOT HAVE FLOW VELOCITIES THAT EXCEED 3 FEET PER SECOND.
- 12. PRESSURE PIPING SHALL BE TESTED TO 50 PSI.
  - a. PRESSURE PIPING SHALL BE DEFINED AS PUMP SUCTION PIPING, AND ANY PIPING AFTER THE PUMP DISCHARGE, OR ANY PIPING WHICH WILL HAVE FLOW VELOCITIES EXCEEDING 3 FEET PER
- 10. EXTEND ALL PIPING TO ITS SPECIFIC FILTRATION SYSTEM. DO NOT CONNECT THE PIPING TO THE FILTRATION SYSTEM UNTIL THE PRESSURE-TEST IS COMPLETED, APPROVED, AND REMOVED FROM THE PIPING.

### **DEFINITIONS:**

- 1. <u>CONTRACTOR:</u> PERSON OR ENTITY AUTHORIZED TO CONSTRUCT, INSTALL AND OPERATE A COMMERCIAL POOL AND THEIR APPURTENANCES, AND MAINTAIN PROPER LICENSES TO DO SO.
- 2. CRITICAL: THIS WORD DESCRIBES DIMENSIONS THAT SHALL NOT BE SUBJECT TO DEVIATION OR ERRORS FOR ANY REASON. VIOLATION OF A CRITICAL DIMENSION MIGHT SUBJECT THE FOUNTAIN TO A POTENTIAL VARIANCE ACTION OR A PERMANENT WITHHOLDING OF A FUTURE OPERATING CERTIFICATE. WESTON & SAMPSON CONSIDERS ALL DIMENSIONS CONTAINED WITH THE DRAWINGS AS VITAL; HOWEVER, THE WORD CRITICAL IS ADDED TO ATTRACT THE ATTENTION OF THE CONTRACTOR.
- PROVIDE: OBTAIN, PURCHASE, SUPPLY, INSTALL AND WARRANTY COMPLETELY IN ACCORDANCE WITH ALL CODES, RULES, REGULATIONS AND THE REQUIREMENTS OF THE DRAWINGS AND TECHNICAL SPECIFICATIONS.
- 4. <u>DOH:</u> DEPARTMENT OF HEALTH OR ALSO KNOWN AS THE APPROVING AND GOVERNING

### **ABBREVIATIONS**

ASBESTOS CEMENT PIPE ASPHALT COATED ACORRUGATED METAL PIPE AIR RELEASE VALVE AMERICAN SOCIETY FOR **TESTING AND MATERIALS** BITUMINOUS CONCRETE BITUMINOUS BUILDING BENCH MARK BLOW OFF **BUTTERFLY VALVE** CABLE TELEVISION CATCH BASIN CONCRETE CURB CAST IRON CENTERLINE CEMENT LINED CORRUGATED METAL PIPE CONCRETE CUBIC FEET CUBIC YARD STORM DRAIN DROP INLET, DUCTILE IRON DIAMETER DRAIN MANHOLE DRAWING EACH EACH FACE **ELEVATION** EDGE OF PAVEMENT **EACH WAY** 

Consultants:

**IMPROVEMENTS TO THE** 

**ARLINGTON RESERVOIR** 

210 LOWELL ST

ARLINGTON, MA 02474

85 Devonshire Street, 3rd Floor,

Boston, MA 02109

617-412-4480 800.SAMPSON

www.westonandsampson.com

	Revi	isions:	
	No.	Date	Description
I⊢			
l ⊦	_		
▍▐			
▮┟			



ssued For:

**NOI SUBMISSION** NOT FOR CONSTRUCTION -

11/20/2018

MES

Drawn By: Reviewed By:

Approved By: W&S Project No:

W&S File No:

Drawing Title:

PIPING **GENERAL** 

**NOTES** 

Sheet Number:

**SP-1.1** 

ACCMP BIT BLDG BM во CATV CB CC CMP CONC CU FT CY DIA DMH DWG **ELEV** EOP EW **EXISTING EXIST** FLG **FLANGE** FT FEET, FOOT NATURAL GAS GR GRANITE GALV GALVANIZED HC HOUSE CONNECTION GC **GRANITE CURB** HORIZ HORIZONTAL HP HIGH PRESSURE HYD FIRE HYDRANT INV INVERT INSIDE DIAMETER IRON PIPE POUND LINEAR FEET LUMP SUM MAXIMUM MAX MB MAIL BOX MECH MECHANICAL MH MANHOLE MIN MINIMUM MISC MISCELLANEOUS MJ MECHANICAL JOINT NORTH NORTH EAST NORTH WEST NF NOT FOUND NO OR # NUMBER OD OUTSIDE DIAMETER PRESTRESSED CONCRETE PLAIN END, POLYETHYLENE PROPERTY LINE PLATE PVC POLYVINYL CHLORIDE **PVMT** PAVEMENT RCP REINFORCED CONCRETE PIPE ROW RIGHT-OF-WAY RQD ROCK QUALITY SEWER SE SOUTH EAST **SECT** SECTION SF **SQUARE FEET** SHT SHEET SPEC **SPECIFICATIONS** 

SQUARE FEET

TELEPHONE

THRESHOLD

THICK (NESS)

VITRIFIED CLAY

WATER, WEST

**TYPICAL** UTILITY POLE

**VERTICAL** 

WITHOUT

STATION

STEEL

SEWER SERVICE

SIDEWALK, SOUTH WEST HYDROSTATIC THRUST,

TEMPORARY BENCH MARK

SS

STA

STL

SW

TH

THK

TYP

VC

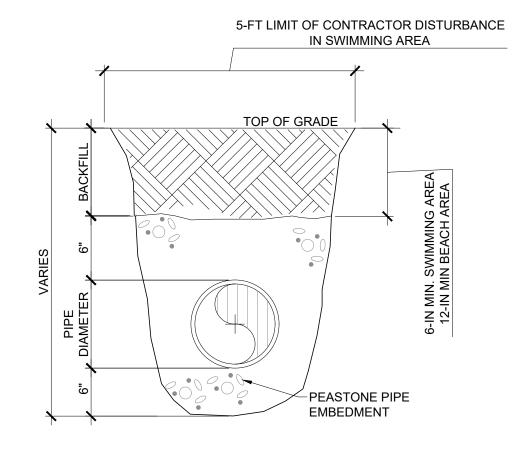
**VERT** 

W/O

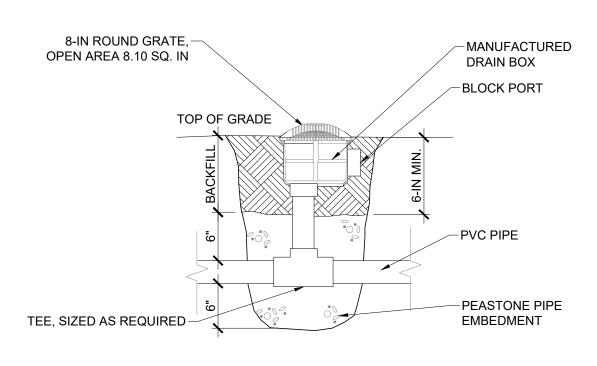
COPYRIGHT 2016 WESTON & SAMPSON

# TBD

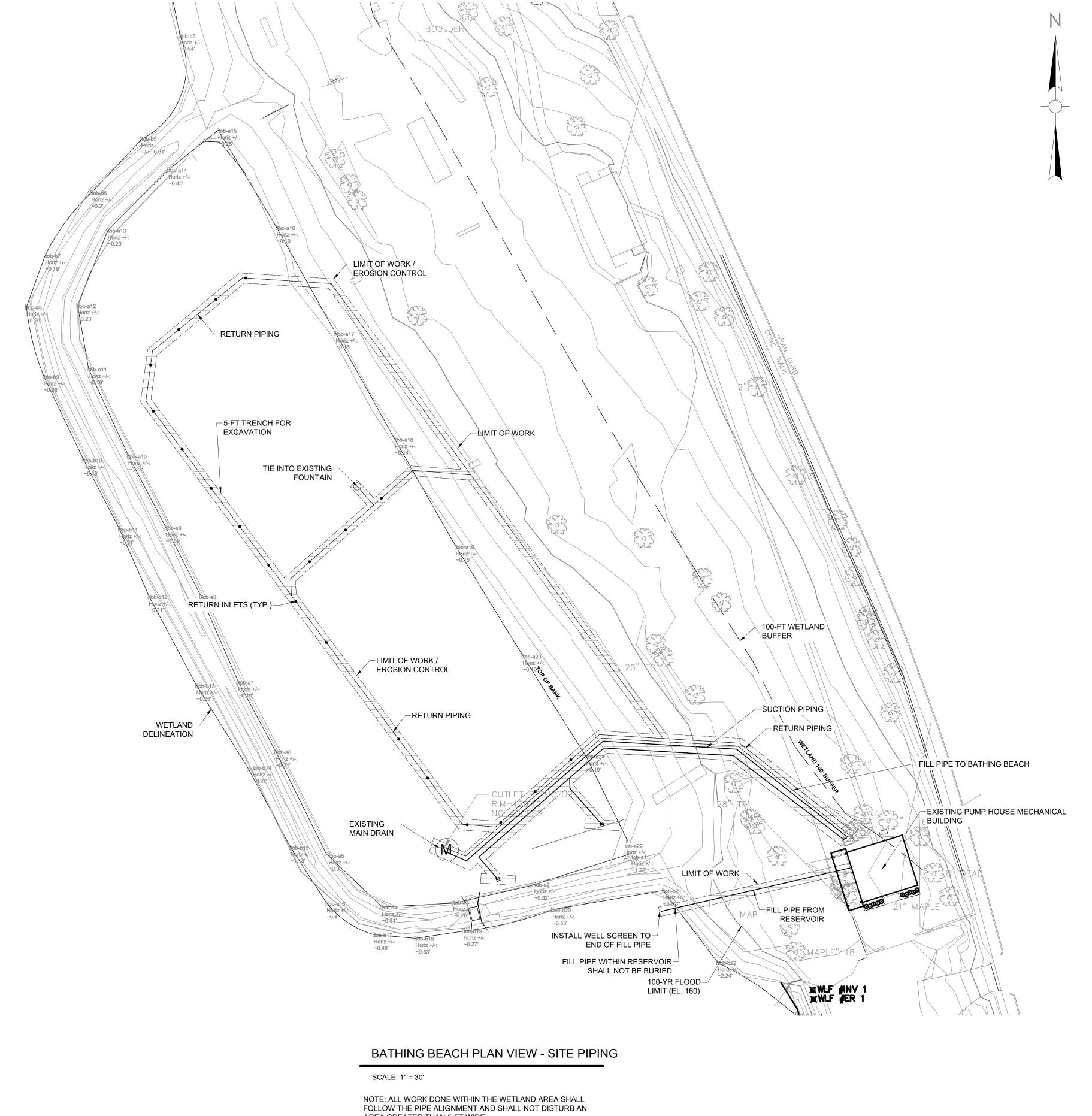
SKIMMER SCALE: NOT TO SCALE



BURIED PIPE SCALE: NOT TO SCALE



RETURN INLET SCALE: NOT TO SCALE



NOTE: ALL WORK DONE WITHIN THE WETLAND AREA SHALL FOLLOW THE PIPE ALIGNMENT AND SHALL NOT DISTURB AN AREA GREATER THAN 5-FT WIDE.

**IMPROVEMENTS TO THE** ARLINGTON RESERVOIR 210 LOWELL ST, ARLINGTON, MA 02474

# Weston & Sampson

85 Devonshire Street, 3rd Floor, Boston, MA 02109 617-412-4480 800.SAMPSON www.westonandsampson.com

Consultants:

Rev	isions:	
No.	Date	Description
Sea		
	N.	AAAAA.



**NOI SUBMISSION** - NOT FOR CONSTRUCTION -

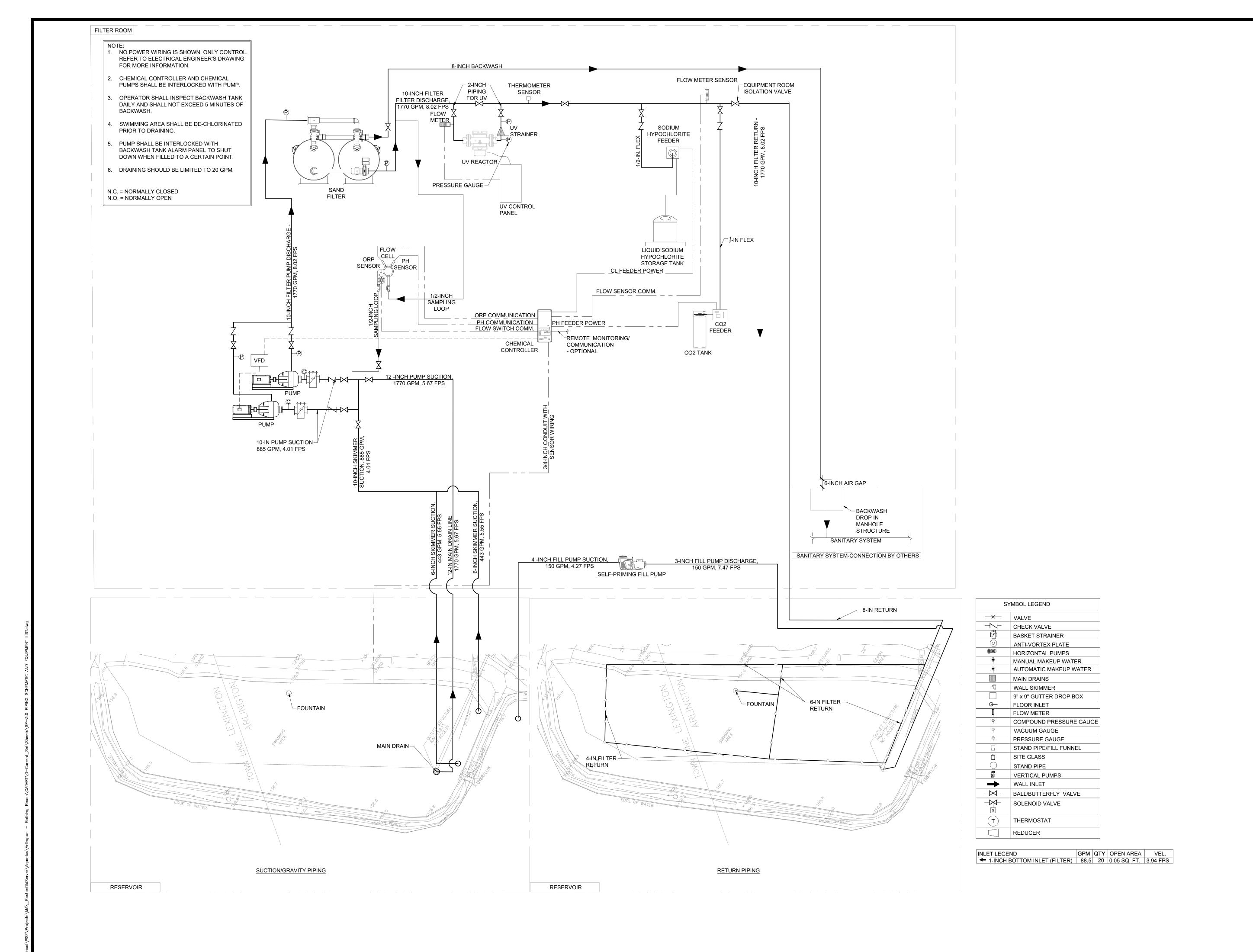
11/20/2018 Reviewed By: Approved By:

W&S Project No: W&S File No:

Drawing Title:

PROPOSED PIPING PLAN

SP-2.0



**IMPROVEMENTS TO THE ARLINGTON RESERVOIR** 210 LOWELL ST, ARLINGTON, MA 02474

Weston & Sampson

85 Devonshire Street, 3rd Floor, Boston, MA 02109 617-412-4480 800.SAMPSON www.westonandsampson.com

Consultants:

Rev	Revisions:						
No.	Date	Description					
Sea	al:	1105					

Issued For:

**NOI SUBMISSION** - NOT FOR CONSTRUCTION -

11/20/2018

Approved By:

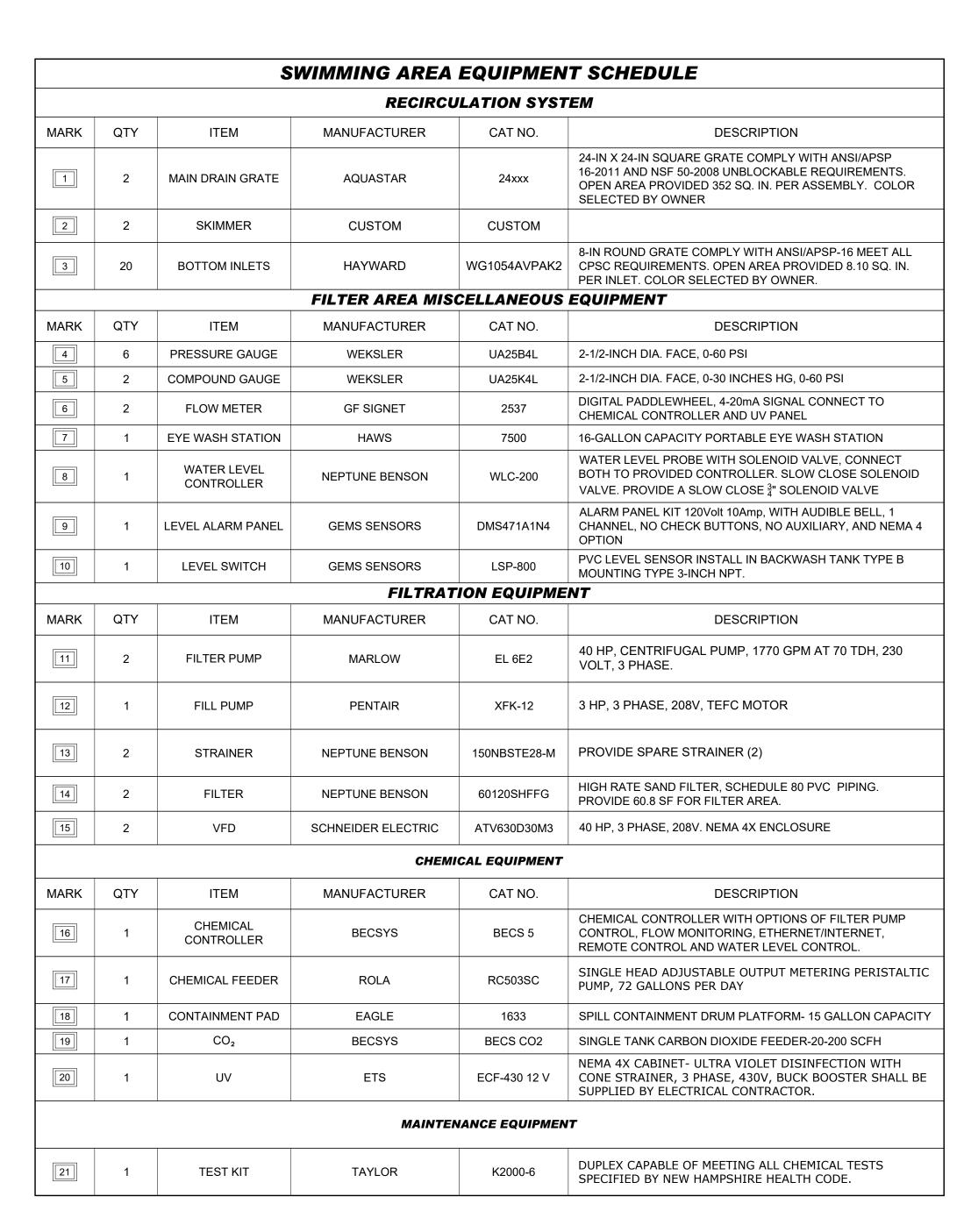
W&S Project No: W&S File No:

Drawing Title: **PIPING** 

SCHEMATIC AND **EQUIPMENT** LIST Sheet Number:

SP-3.0

COPYRIGHT 2016 WESTON & SAMPSON



RESERVOIR DATA CHART							
DESCRIPTION AMOUNT							
TOTAL RESERVOIR SURFACE WATER AREA	45,400	S.F.					
TOTAL RESERVOIR PERIMETER	965	L.F.					
RESERVOIR AVERAGE DEPTH	2-FT 6-IN						
TOTAL RESERVOIR VOLUME	113,500	CU. FT.					
TOTAL RESERVOIR VOLUME	849,095	GALS					
RESERVOIR TURNOVER (T.O.R.)	8 HRS. AT	1770 GPM					
FLOW RATE - RESERVOIR	1770	GPM					
FILTER AREA	60.8	S.F. PER FILTER					
FILTER APPLICATION RATE	14.56	GPM/S.F.					

IMPROVEMENTS TO THE ARLINGTON RESERVOIR

210 LOWELL ST, ARLINGTON, MA 02474

Weston & Sampson

85 Devonshire Street, 3rd Floor, Boston, MA 02109 617-412-4480 800.SAMPSON www.westonandsampson.com

Consultants:		

	Revisions:				
	No.	Date	Description		



Issued For

NOI SUBMISSION
- NOT FOR CONSTRUCTION -

11/20/2018

Date:
Drawn By:
Reviewed By:

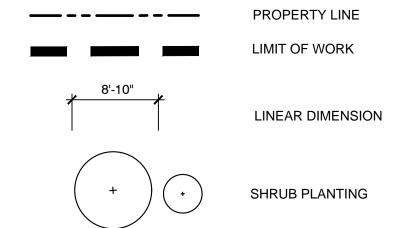
Approved By:

W&S Project No: W&S File No:

PIPING
SCHEMATIC
AND
EQUIPMENT
LIST (CONT.)

SP-3.1

# LAYOUT, MATERIALS AND PLANTING LEGEND:

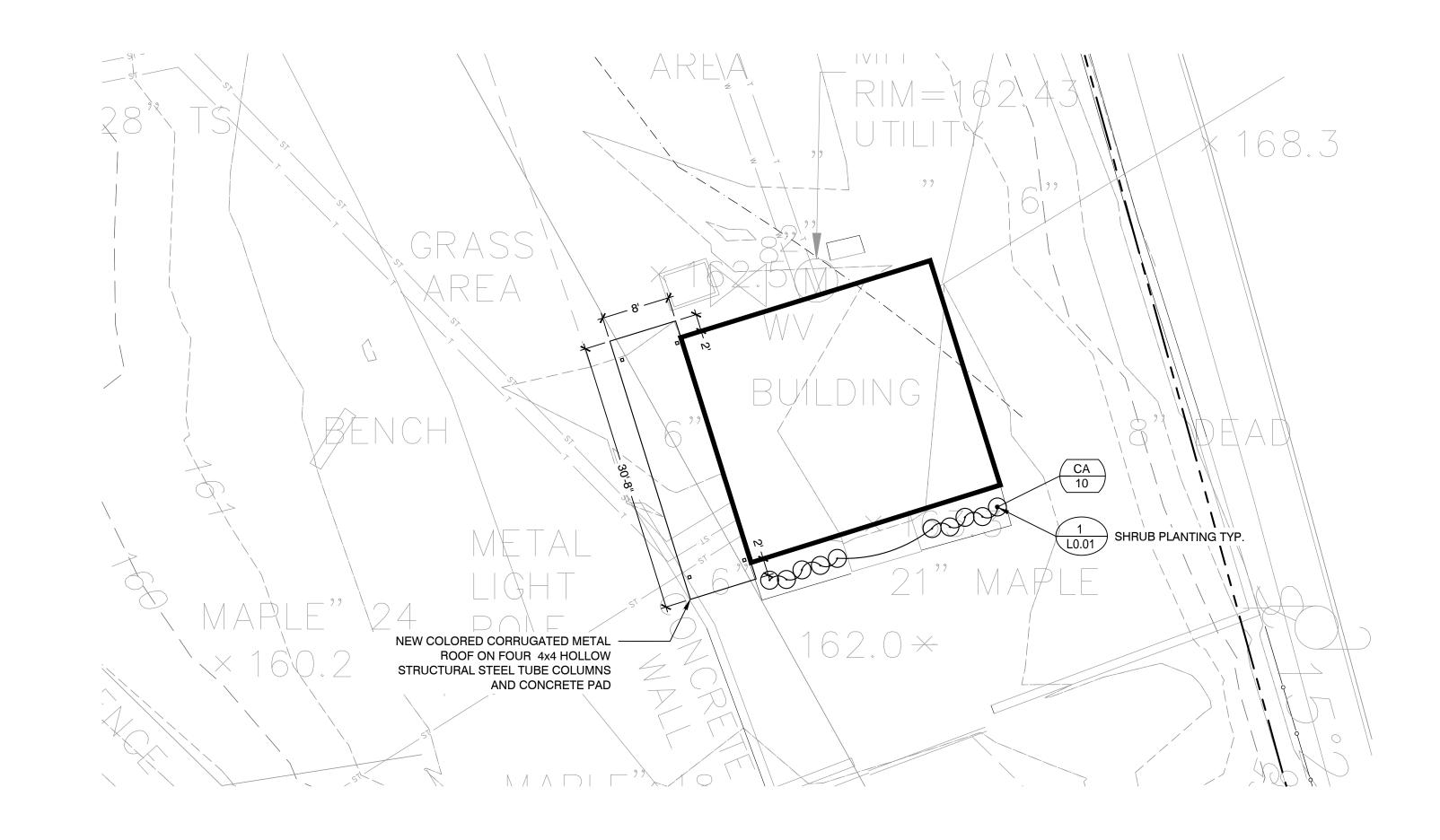


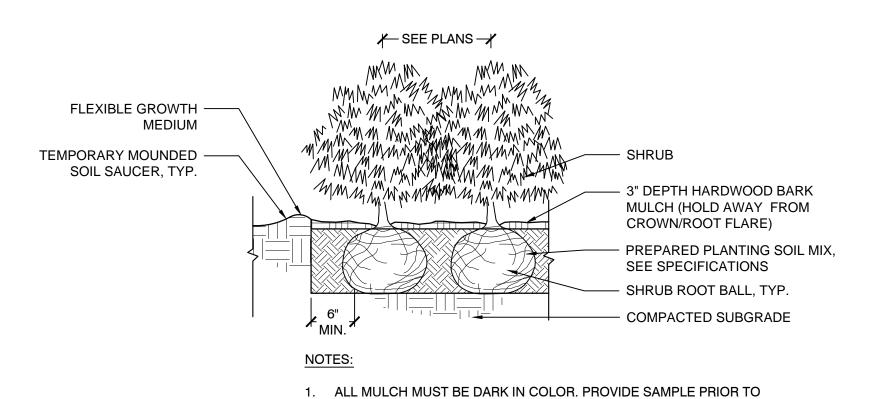
# PLANTING SCHEDULE:

SHRUE	3S				
ABRV.	QTY	BOTANICAL NAME	COMMON NAME	CONT.	NOTES
CA	10	CORNUS ALTERNIFOLIA	PAGODA DOGWOOD	5' HT. B&B	

# PLANTING NOTES:

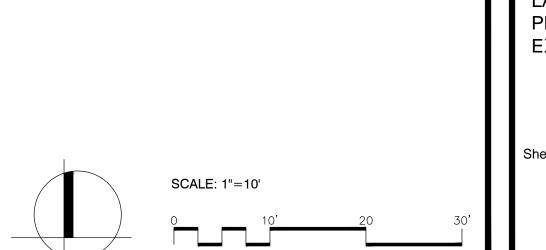
 ALL PLANT LOCATIONS SHALL BE VERIFIED IN FIELD BY OWNER'S REPRESENTATIVE PRIOR TO PLANTING.





INSTALLATION TO BE APPROVED BY OWNER'S REPRESENTATIVE.





IMPROVEMENTS TO THE ARLINGTON RESERVOIR

210 LOWELL ST, ARLINGTON, MA 02474

Weston & Sampson

85 Devonshire Street, 3rd Floor, Boston, MA 02109 617-412-4480 800.SAMPSON www.westonandsampson.com

Consultants:

Rev	isions:	
No.	Date	Description



Issued For:

NOI SUBMISSION
- NOT FOR CONSTRUCTION -

Scale:
Date:

Date: 11/20/2018

Drawn By: MES

Reviewed By:

Approved By:

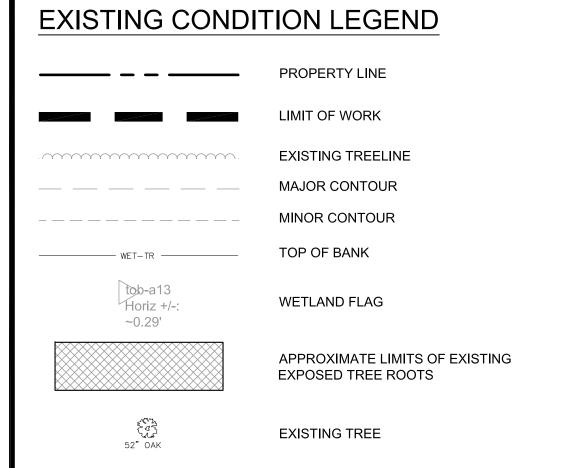
W&S Project No: W&S File No:

Drawing Title:

LAYOUT, MATERIALS & PLANTING PLAN AT EXISTING PUMP HOUSE

Sheet Number:

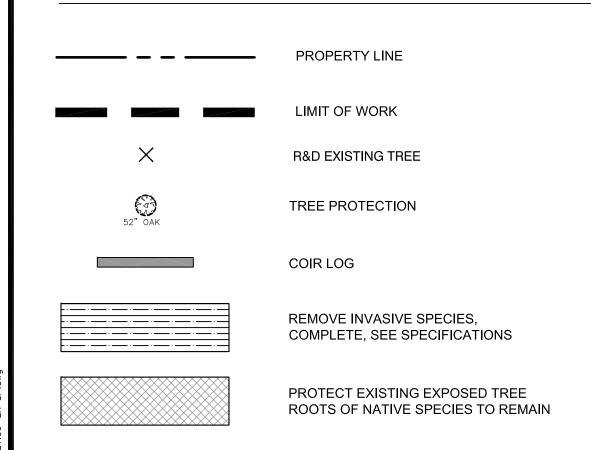
L0.0



# **EXISTING CONDITIONS NOTES:**

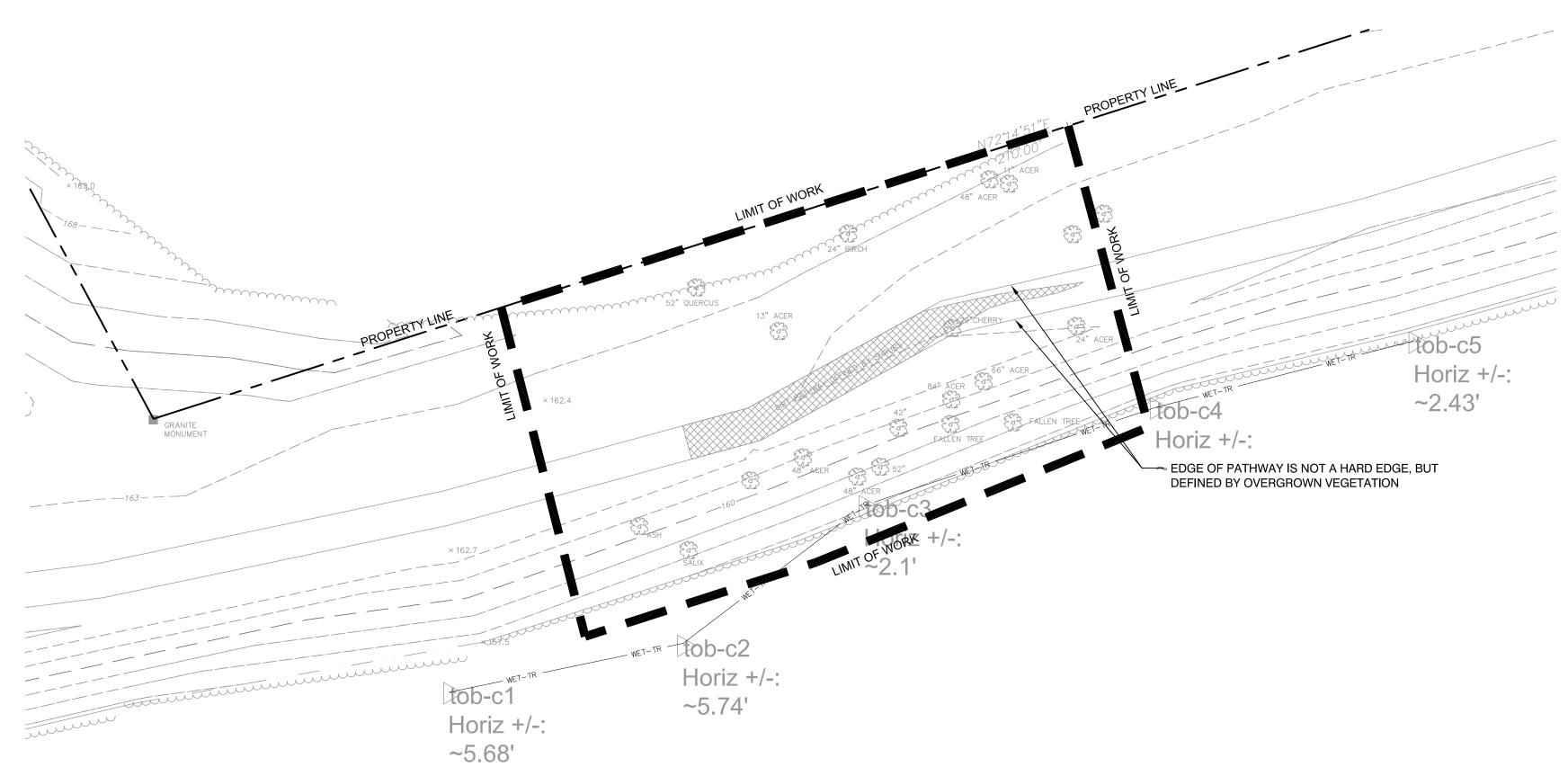
1. TREE LOCATIONS AND CALIPER SIZE ARE APPROXIMATE AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR. NOT ALL TREES WITHIN THE LIMIT OF WORK ARE MARKED ON THE PLAN.

# SITE PREPARATION AND DEMOLITION LEGEND



# SITE PREPARATION AND DEMOLITION NOTES:

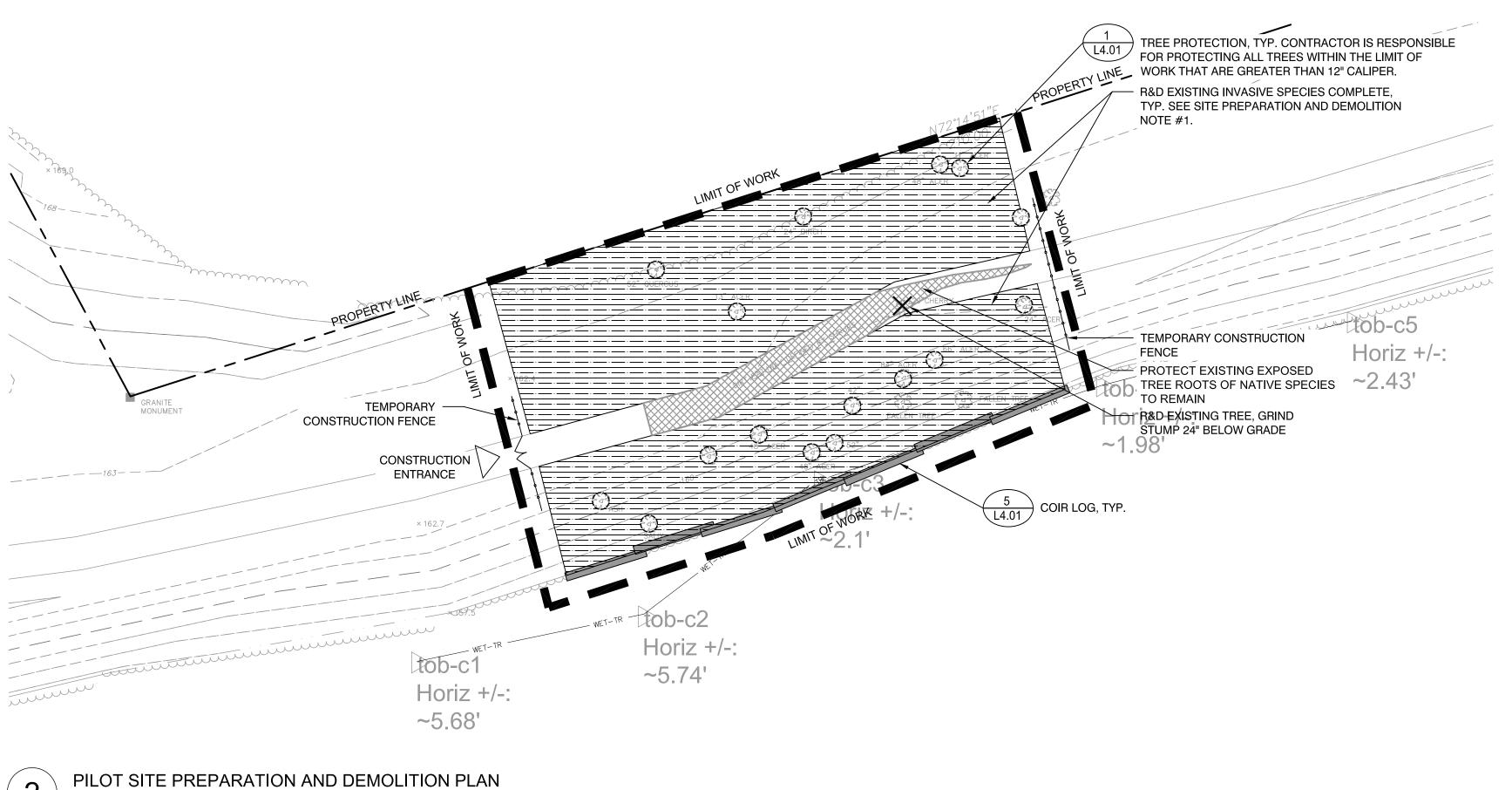
- CONTRACTOR SHALL CUT AND DAB ALL INVASIVE WOODY AND HERBACEOUS PERENNIAL PLANTS WITHIN THE AREAS SHOWN ON THE PLAN. CUT STEMS AS CLOSE TO THE SOIL LINE AS POSSIBLE AND APPLY HERBICIDE (GLYPHOSATE) AS SOON AS POSSIBLE AFTER CUTTING. FOR ALLIARIA PETIOLATA (GARLIC MUSTARD), IF PLANTS ARE REMOVED ONCE FLOWERING HAS BEGUN, ALL PLANTS MUST BE BAGGED TO CONTAIN SEEDS. SEEDS CAN REMAIN VIABLE IN THE SOIL FOR 7 YEARS AND CAN STILL RIPEN AFTER PLANTS ARE UPROOTED.
- CONTRACTOR SHALL TAKE CARE TO PROTECT EXISTING NATIVE SPECIES TO REMAIN WITHIN THE INVASIVE REMOVAL AREA SHOWN ON THE PLAN.
- 3. ALL WORK WITHIN THE VICINITY OF TREE ROOTS SHALL BE COMPLETED BY HAND. CONTRACTOR SHALL TAKE EXTREME CARE SUCH THAT EXPOSED ROOTS ARE NOT DAMAGED DUE TO CONSTRUCTION ACTIVITIES.
- THE ACCESS ROUTE ONTO THE TRAIL IS STILL UNDER DISCUSSION. TWO OPTIONS WERE DISCUSSED: 1) EITHER BY WAY OF THE FARM ROAD ALONG THE NORTHERN EDGE OF THE PROPERTY OR AT THE TRAIL CONNECTION IN THE NORTHWEST CORNER OF THE PROPERTY AT RINDGE AVENUE IN LEXINGTON. SITE ACCESS AND THE STAGING / STOCKPILING AREA SHALL BE COORDINATED WITH THE OWNER AND ALL ABUTTING NEIGHBORS, INCLUDING THE TOWN OF LEXINGTON.
- THE END OF THE CONSTRUCTION FENCE SHALL BE IN THE EXISTING VEGETATION TO ENSURE THAT THE SITE IS SECURE.

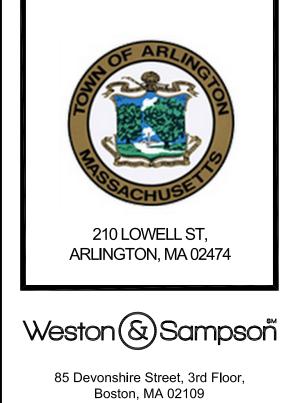


PILOT SITE EXISTING CONDITIONS PLAN

SCALE: 1" = 10'-0"

SCALE: 1" = 10'-0"





**IMPROVEMENTS TO THE ARLINGTON RESERVOIR** 

617-412-4480 800.SAMPSON www.westonandsampson.com

Consultants:

Rev	isions:	
No.	Date	Description
l Seal		
	"Hinde Constitution of the	SACHUSE SOLUTION F. RUSS AND SCAR CONTROL OF SOL
Issu	ed For:	
	NOI S	SUBMISSION

Scale: Date: 11/20/2018 Drawn By:

- NOT FOR CONSTRUCTION -

Reviewed By: Approved By:

W&S Project No: W&S File No:

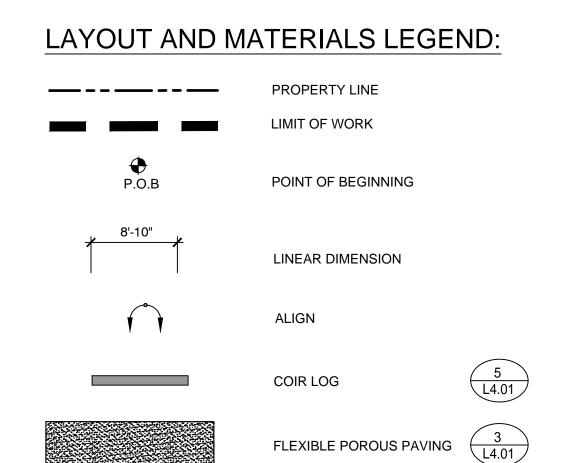
Drawing Title:

PILOT SITE EXISTING CONDITIONS PLAN, PILOT SITE PREPARATION AND **DEMOLITION PLAN** 

Sheet Number:

319 of 346

COPYRIGHT 2016 WESTON & SAMPSON

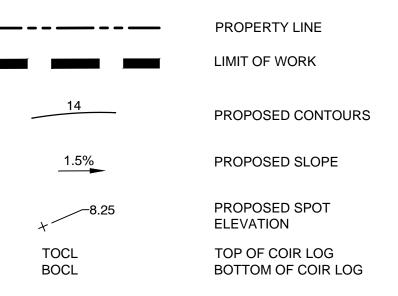


# LAYOUT AND MATERIAL NOTES

1. THIS PERIMETER TRAIL AND SHORELINE STABILIZATION PILOT AREA WAS FIELD LOCATED BY WESTON & SAMPSON ON OCTOBER 2, 2018. IT HAS BEEN MARKED BY RED FLAGS AT EITHER END. PRIOR TO COMMENCING WORK, THE CONTRACTOR SHALL VERIFY THE LOCATION ALONG THE TRAIL AND ALERT THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES.

2. SHRUBS AND TREES SHALL BE PRUNED BACK TO ALLOW FOR A CLEAR HEIGHT OF 8 FEET AND CLEAR WIDTH OF 5 FEET WITHIN THE LIMIT OF WORK. SEE DETAIL 2, SHEET L4.01.

# **GRADING LEGEND:**



# **GRADING NOTES**

1. FEATHER GRADES OUT FROM THE FLEXIBLE POROUS PAVING SUCH THAT THE FINISHED GRADE MEETS FLUSH AGAINST THE FLEXIBLE POROUS PAVING ON ALL SIDES.

2. CONTRACTOR SHALL FINELY GRADE FROM PATHWAY TO TOP OF COIR LOGS AND AROUND EXISTING TREES SUCH THAT THE BASES OF EXISTING TREES REMAIN OPEN.

N.2582382.89 (E.738623.41 )

N.2582382.89 (E.738623.41 )

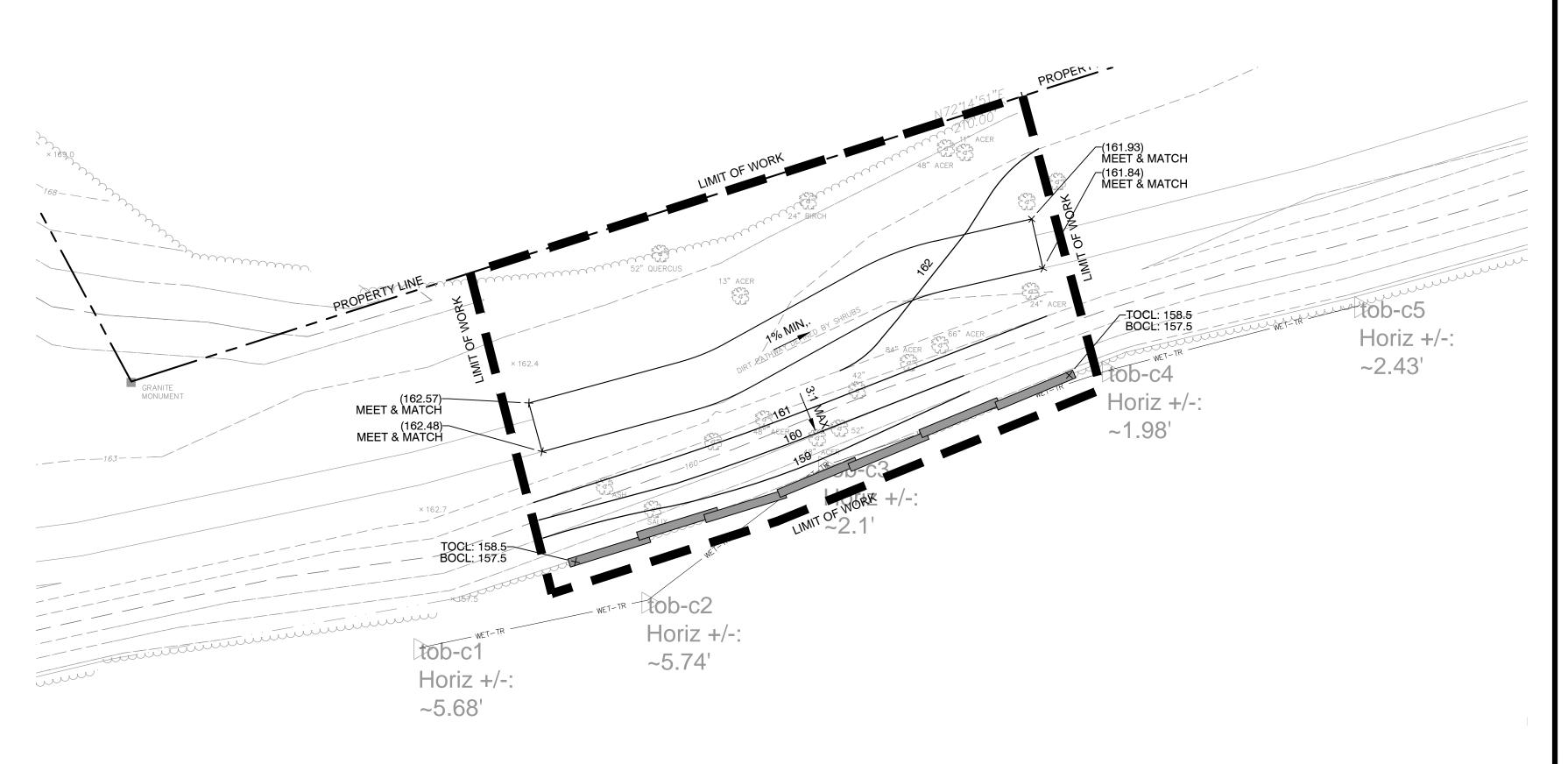
N.258237.35 (E.738671.47 )

PILOT SITE LAYOUT AND MATERIALS PLAN

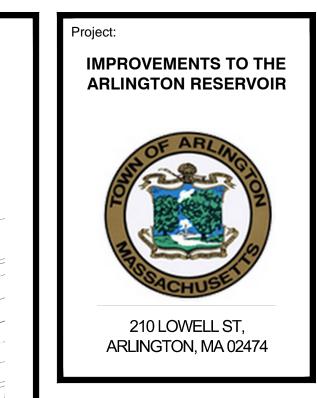
SCALE: 1" = 10'-0"

PILOT SITE GRADING PLAN

SCALE: 1" = 10'-0"

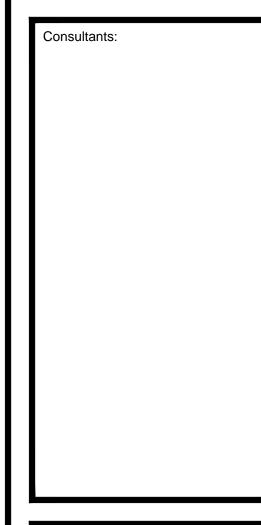


SCALE: 1"=10'



Weston & Sampson

85 Devonshire Street, 3rd Floor, Boston, MA 02109 617-412-4480 800.SAMPSON www.westonandsampson.com



Rev	isions:				
No.	Date	Description			
Sea	l:	SACHUSE TO SACRAMAN AND SCAPE AND SC			
Issued For:					

NOI SUBMISSION
- NOT FOR CONSTRUCTION -

Date: 11/20/2018

Drawn By: MES

Reviewed By:

Approved By:

W&S Project No: 21607 W&S File No:

Drawing Title:

PILOT SITE LAYOUT AND MATERIALS PLAN; PILOT SITE GRADING PLAN

Sheet Number:

L2.01

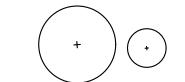
320 of 346

COPYRIGHT 2016 WESTON & SAMPSON

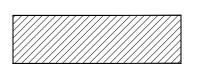
# PLANTING LEGEND:

LIMIT OF WORK

LIMIT OF AGED PINE BARK MULCH



SHRUB PLANTING



HERBACEOUS PERENNIAL AND FERN PLANTING



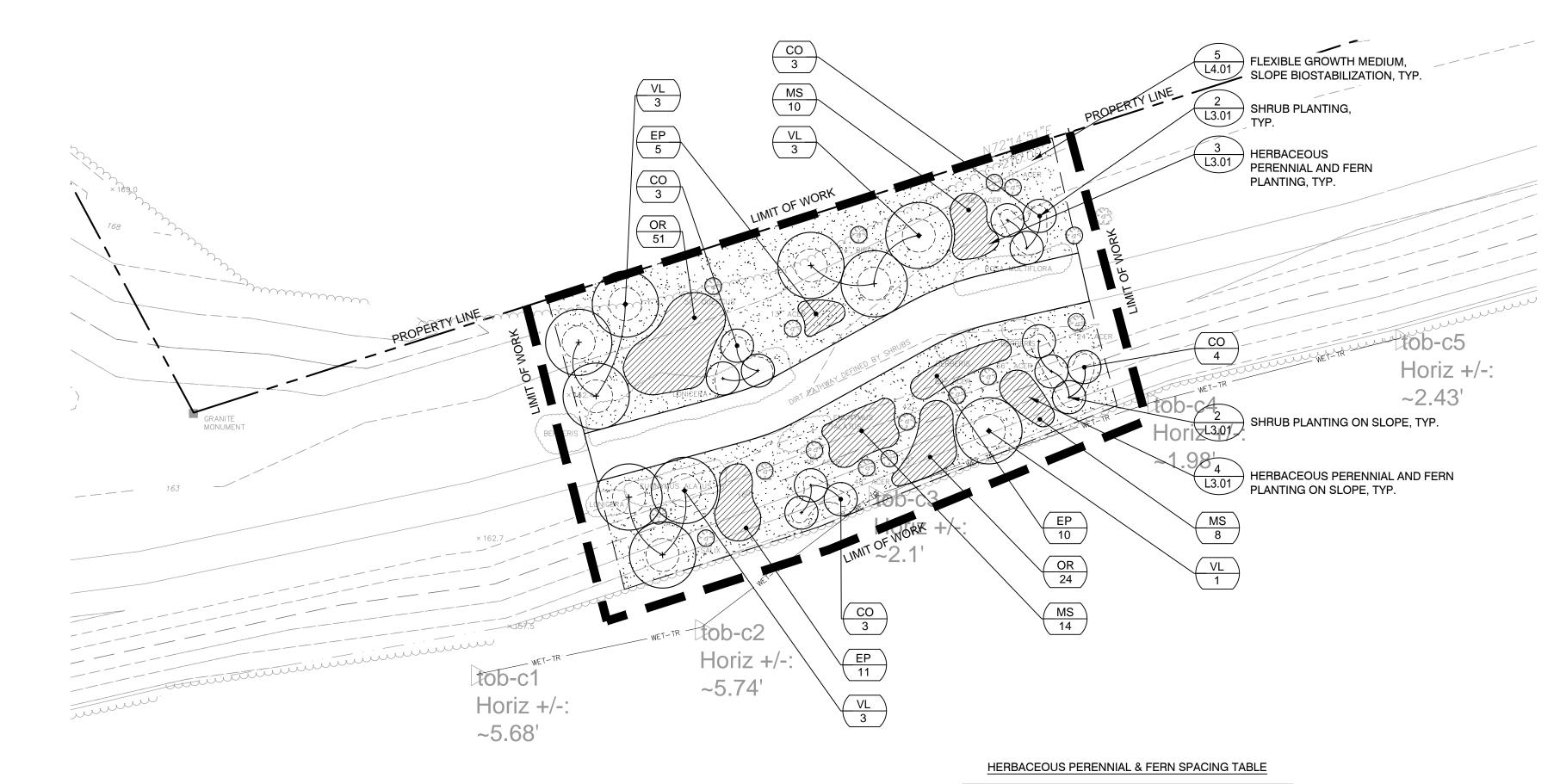
FLEXIBLE GROWTH MEDIUM  $\frac{5}{14.01}$ 

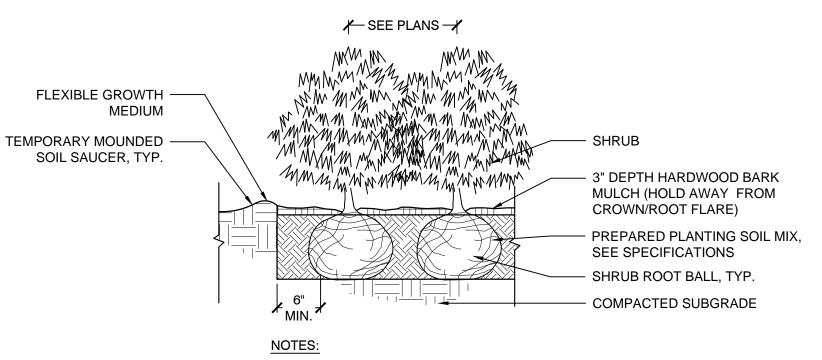
### PLANT SCHEDULE

SHRUE	3S				
ABRV.	QTY	BOTANICAL NAME	COMMON NAME	CONT.	NOTES
CO	13	CEPHALANTHUS OCCIDENTALIS	BUTTONBUSH	#2 CONT.	
VL	10	VIBURNUM LENTAGO	NANNYBERRY VIBURNUM	#2 CONT.	
HERB/	CEO	US PERENNIAL AND FERNS		•	
ABRV.	QTY	BOTANICAL NAME	COMMON NAME	CONT.	NOTES
EP	26	EUTROCHIUM PURPUREUM	JOE-PYE WEED	2" PLUG	SPACE 24" O.C.
MS	32	MATTEUCCIA STRUTHIOPTERIS	OSTRICH FERN	2" PLUG	SPACE 24" O.C.
OR	75	OSMUNDA REGALIS	ROYAL FERN	2" PLUG	SPACE 18" O.C.

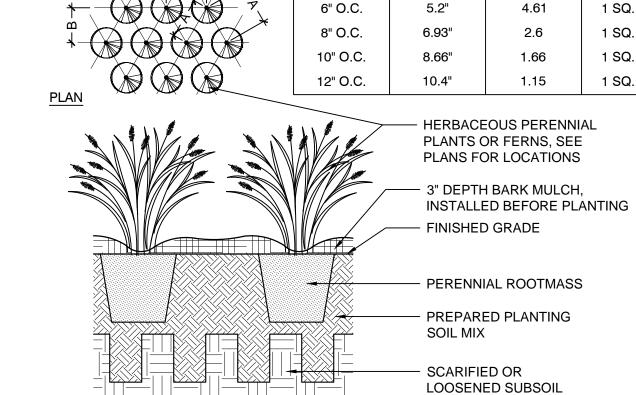
# PLANTING NOTES:

1. NEW PLANTING LOCATIONS SHOWN ON THE PLAN ARE APPROXIMATE. PLANTS SHALL BE LOCATED IN THE FIELD BY THE CONTRACTOR AND VERIFIED BY THE OWNER'S REPRESENTATIVE PRIOR TO PLANTING. NEW PLANTING SHALL BE LOCATED IN AREAS THAT AVOID EXISTING TREE ROOTS AND EXISTING NATIVE SPECIES TO REMAIN.





1. ALL MULCH MUST BE DARK IN COLOR. PROVIDE SAMPLE PRIOR TO INSTALLATION TO BE APPROVED BY OWNER'S REPRESENTATIVE.



PLANT

SPACING "A" | SPACING "B"

**PLANTS** 

4.61

1.66

1.15

AREA UNIT

1 SQ. FT.

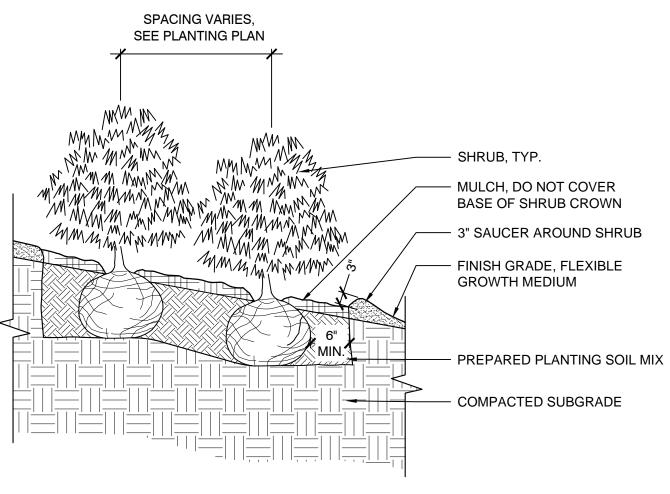
1 SQ. FT.

1 SQ. FT.

1 SQ. FT.

NOTES: 1. ALL GROUND COVERS TO BE PLANTED IN TRIANGULAR PATTERN. SEE PLANTING SCHEDULE FOR SPACING.

# SHRUB PLANTING SCALE: NTS



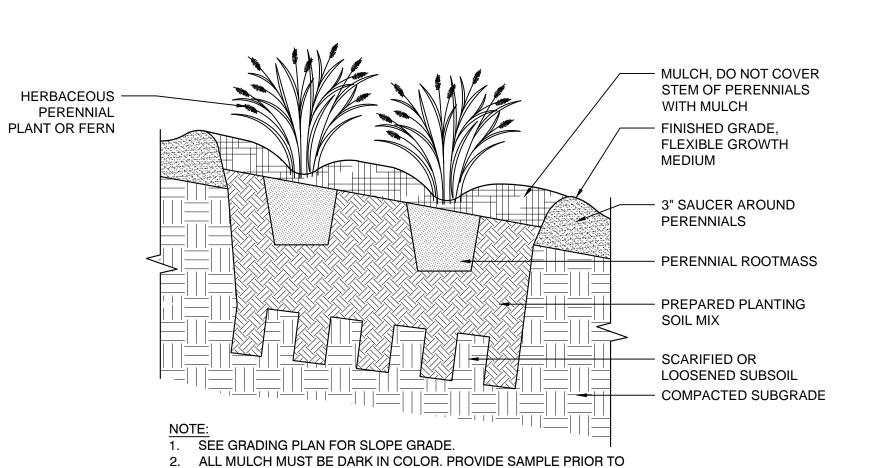
1. SEE GRADING PLAN FOR SLOPE GRADE. 2. ALL MULCH MUST BE DARK IN COLOR. PROVIDE SAMPLE PRIOR TO INSTALLATION TO BE APPROVED BY OWNER'S REPRESENTATIVE.

SCALE: NTS

SHRUB PLANTING ON SLOPE



SCALE: NTS



HERBACEOUS PERENNIAL AND FERN PLANTING ON SLOPE SCALE: NTS

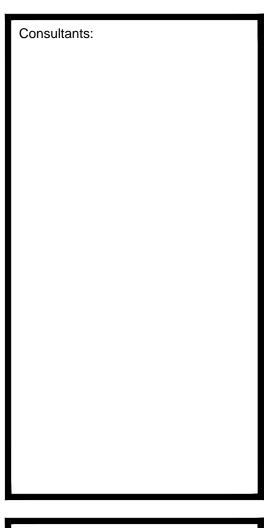
INSTALLATION TO BE APPROVED BY OWNER'S REPRESENTATIVE.

SCALE: 1"=10'

**IMPROVEMENTS TO THE ARLINGTON RESERVOIR** 210 LOWELL ST, ARLINGTON, MA 02474

Weston & Sampson

85 Devonshire Street, 3rd Floor, Boston, MA 02109 617-412-4480 800.SAMPSON www.westonandsampson.com



Sea	l:	The state of the s	* (800)	ACHUSE YN F. R. W. 122 ANDSCP	TS A SHIRING	THE PARTY OF THE P	1.0 × 1

Description

Issued For:

NOI SUBMISSION - NOT FOR CONSTRUCTION

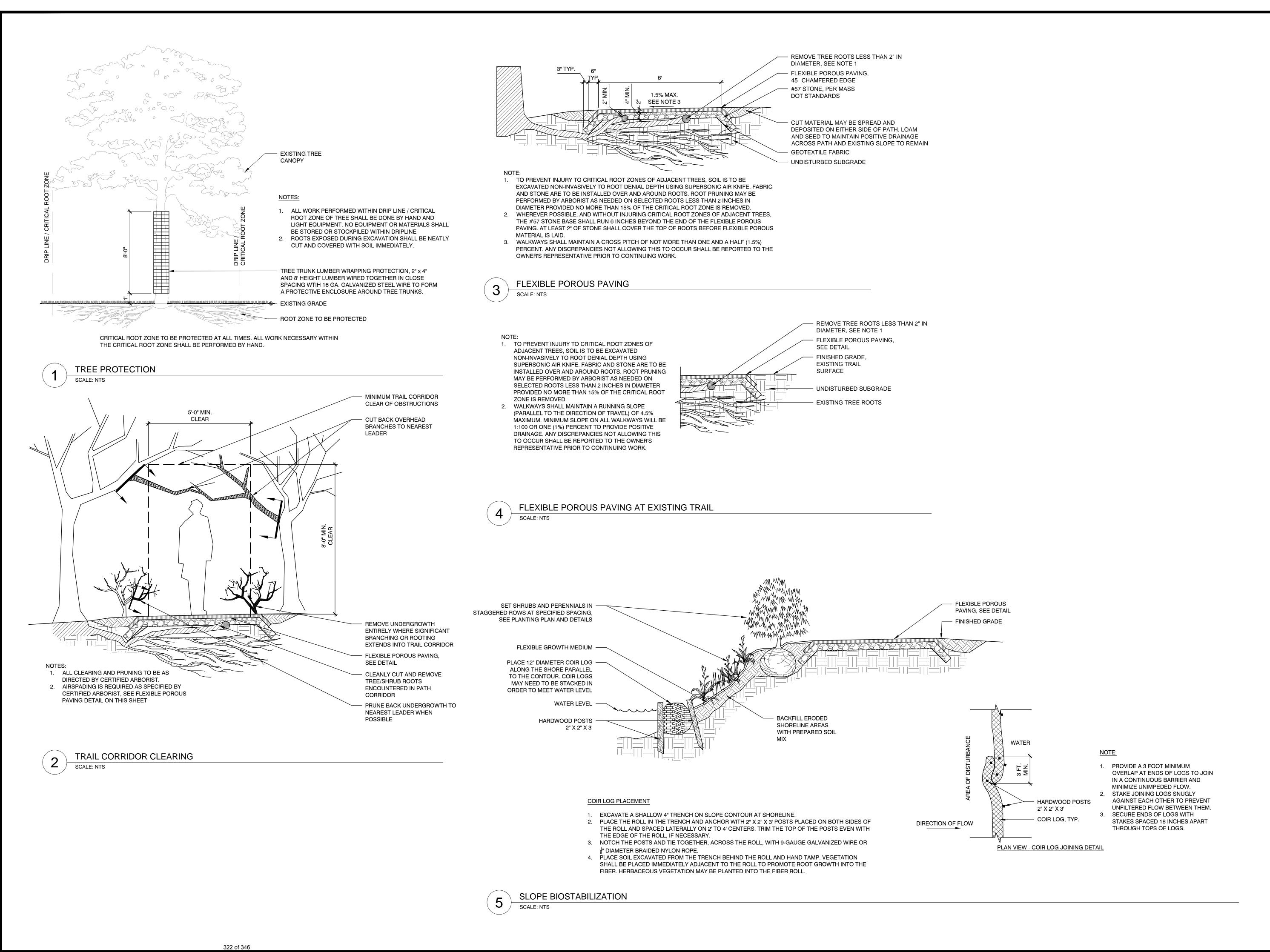
11/20/2018 Date: MES Drawn By: Reviewed By:

Approved By: W&S Project No: W&S File No:

Drawing Title:

PILOT SITE PLANTING PLAN

Sheet Number:



IMPROVEMENTS TO THE ARLINGTON RESERVOIR

210 LOWELL ST, ARLINGTON, MA 02474

# Weston & Sampson

85 Devonshire Street, 3rd Floor, Boston, MA 02109 617-412-4480 800.SAMPSON www.westonandsampson.com

Consultants:

Revisions:

No. Date Description

SACHUSET AND LANDSCARE MINING AND LANDSCARE MINING

NOI SUBMISSION
- NOT FOR CONSTRUCTION

11/20/2018

Issued For:

Date:
Drawn By:

Reviewed By:

Approved By:

Approved By:

W&S Project No:

W&S File No:

Drawing Title:

PILOT SITE CONSTRUCTION DETAILS

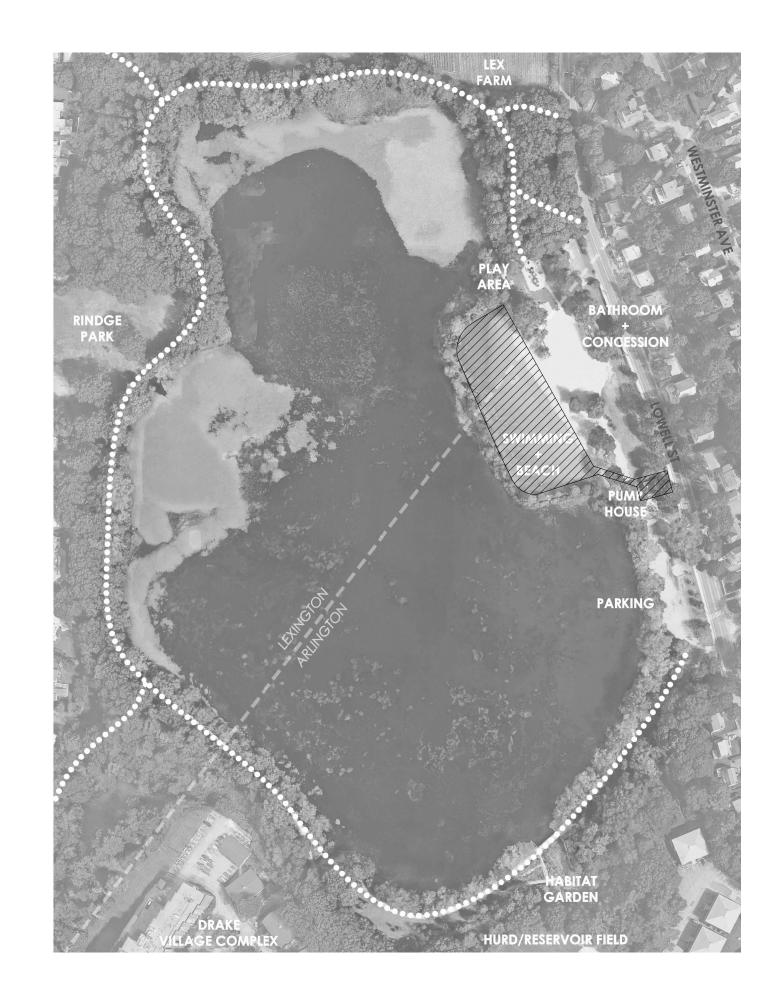
Sheet Number:

L4.01



# TOWN OF ARLINGTON

# IMPROVEMENTS TO THE ARLINGTON RESERVOIR



# **SHEET INDEX**

G-0.01..... GENERAL NOTES

BATHING BEACH FILTRATION AND PUMP HOUSE BUILDING UPGRADES SP-D-1.0...... RESERVOIR SITE DEMOLITION SP-1.0..... SITE LAYOUT AND TEMPORARY CONTROLS

SP-2.0...... PROPOSED PIPING PLAN
SP-2.1..... PROPOSED PIPING/SITE DETAILS
L-0.01..... PLANTING AT EXISTING PUMP HOUSE

# **Locus Map**



- NOI SUBMISSION - REVISION #1

**JANUARY 3, 2019** 

**Prepared By** 



85 Devonshire St, 3rd Floor, Boston, MA 02109 (617) 412-4480 (800) Sampson www.westonandsampson.com

COPYRIGHT 2017 WESTON & SAMPSOI

# **GENERAL NOTES**

- PROPERTY LINES, SITE SURVEY AND TOPOGRAPHICAL INFORMATION ON THE GROUND SURVEYS PERFORMED BY WESTON & SAMPSON IN DECEMBER
- 2. BEARINGS REFER TO THE MASSACHUSETTS NAD 83 STATE PLANE COORDINATE SYSTEM (MAINLAND ZONE).
- 3. ELEVATIONS REFER TO THE 1988 NORTH AMERICAN DATUM (NAVD 88)
- 4. REFER TO THE SURVEY LEGEND FOR GENERAL SYMBOLS. ALL BIDDERS ARE REQUIRED TO INSPECT THE PROJECT SITE IN ITS ENTIRETY PRIOR TO SUBMITTING THEIR BID, AND BECOME FAMILIAR WITH ALL CONDITIONS AS THEY MAY AFFECT THEIR BID. CONTRACTOR AND SUB-CONTRACTOR SHALL BE FAMILIAR WITH ALL DRAWINGS AND SPECIFICATIONS PRIOR TO COMMENCING THE CONSTRUCTION.
- 5. LOCATIONS OF ANY UTILITIES SHOWN ON THESE PLANS ARE APPROXIMATE ONLY. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF SUCH UTILITIES, PROTECTING ALL EXISTING UTILITIES AND REPAIRING ANY DAMAGE DONE DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ON-SITE COORDINATION WITH UTILITY COMPANIES AND PUBLIC AGENCIES AND FOR OBTAINING ALL REQUIRED PERMITS AND PAYING ALL REQUIRED FEES. IN ACCORDANCE WITH M.G.L. CHAPTER 82, SECTION 40, INCLUDING AMENDMENTS, CONTRACTORS SHALL NOTIFY ALL UTILITY COMPANIES AND GOVERNMENT AGENCIES IN WRITING PRIOR TO EXCAVATION. CONTRACTOR SHALL ALSO CALL "DIG SAFE" AT (888) 344-7233 NO LESS THAN 72 HOURS, (EXCLUSIVE OF WEEKENDS AND HOLIDAYS), PRIOR TO SUCH EXCAVATION. DOCUMENTATION OF REQUESTS SHALL BE PROVIDED TO OWNER'S REPRESENTATIVE PRIOR TO EXCAVATION WORK.
- 6. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING ALL DRAWINGS AND SPECIFICATIONS TO DETERMINE THE EXTENT OF EXCAVATION AND DEMOLITION REQUIRED TO RECEIVE SITE IMPROVEMENTS.
- ANY DISCREPANCIES OR CONFLICTS BETWEEN THE DRAWINGS AND EXISTING CONDITIONS, EXISTING CONDITIONS TO REMAIN, TEMPORARY CONSTRUCTION AND PERMANENT CONSTRUCTION SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE BEFORE PROCEEDING. ITEMS ENCOUNTERED IN AREAS OF EXCAVATION THAT ARE NOT INDICATED ON THE DRAWINGS, BUT ARE VISIBLE ON SURFACE, SHALL BE THE CONTRACTOR'S RESPONSIBILITY AND SHALL BE REMOVED AT NO ADDITIONAL COST TO THE OWNER.
- 9. ANY ALTERATIONS TO THESE DRAWINGS MADE IN THE FIELD DURING CONSTRUCTION SHALL BE RECORDED BY THE GENERAL CONTRACTOR ON "AS BUILT" DRAWINGS.
- 10. ALL AREAS DISTURBED BY THE CONTRACTOR'S OPERATIONS OUTSIDE THE PROJECT LIMITS, SHALL BE RESTORED TO THE ORIGINAL CONDITION BY THE CONTRACTOR AT NO ADDITIONAL COST AND TO THE SATISFACTION OF THE
- 11. ALL WORK SHOWN ON THE PLANS AS BOLD SHALL REPRESENT PROPOSED WORK. THE TERM "PROPOSED (PROP)" INDICATES WORK TO BE CONSTRUCTED USING NEW MATERIALS.
- 12. ALL KNOWN EXISTING STATE, COUNTY AND TOWN LOCATION LINES AND PRIVATE PROPERTY LINES HAVE BEEN ESTABLISHED FROM AVAILABLE INFORMATION AND ARE INDICATED ON THE PLANS.
- 13. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THEIR EMPLOYEES, AS WELL AS PUBLIC USERS FROM INJURY DURING THE ENTIRE CONSTRUCTION PERIOD USING ALL NECESSARY SAFEGUARDS, INCLUDING BUT NOT LIMITED TO, THE ERECTION OF TEMPORARY WALKS, STRUCTURES, PROTECTIVE BARRIERS, COVERING, OR FENCES AS NEEDED.
- 14. THE CONTRACTOR SHALL SUPPLY THE OWNER WITH THE NAME OF THE OSHA "COMPETENT PERSON" PRIOR TO CONSTRUCTION.
- 15. FILLING OF EXCAVATED AREAS SHALL NOT TAKE PLACE WITHOUT THE PRESENCE OR PERMISSION OF THE OWNER.
- 16. EXISTING TREES TO REMAIN SHALL BE PROTECTED FROM CONSTRUCTION ACTIVITIES. NO STOCKPILING OF MATERIAL, EQUIPMENT OR VEHICULAR TRAFFIC SHALL BE ALLOWED WITHIN THE DRIP LINE OF TREES TO REMAIN. NO GUYS SHALL BE ATTACHED TO ANY TREE TO REMAIN. WHEN NECESSARY OR AS DIRECTED BY THE OWNER'S REPRESENTATIVE, THE CONTRACTOR SHALL ERECT TEMPORARY BARRIERS FOR THE PROTECTION OF EXISTING TREES DURING CONSTRUCTION.
- 17. TREES AND SHRUBS WITHIN THE LIMITS OF WORK SHALL BE REMOVED ONLY UPON THE APPROVAL OF THE OWNER'S REPRESENTATIVE OR AS NOTED ON THE PLANS.
- 18. NO FILLING SHALL OCCUR AROUND EXISTING TREES TO REMAIN WITHOUT THE APPROVAL OF THE OWNER OR ENGINEER.
- 19. TREES AND STUMPS SHALL BE REMOVED AND DISPOSED COMPLETE BY CONTRACTOR.
- 20. ALL UNSUITABLE UNCONTAMINATED EXCESS SOIL FROM CONSTRUCTION ACTIVITIES SHALL BE DISPOSED OF BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE TOWN. REMOVAL ACTIVITIES SHALL BE ACCORDANCE WITH STATE AND LOCAL REGULATIONS AT NO ADDITIONAL COST TO THE TOWN.
- 21. CONTRACTOR IS RESPONSIBLE FOR STAKING CONSTRUCTION BASELINES IN 3. FIELD WITH A MA. REGISTERED PROFESSIONAL LAND SURVEYOR. NO CONSTRUCTION WILL BE PERFORMED WITHOUT THE PROPOSED BASELINES AND LAYOUTS APPROVED BY THE OWNER'S REPRESENTATIVE.
- 22. NO FILL SHALL CONTAIN HAZARDOUS MATERIALS.
- 23. CONTRACTOR SHALL PROVIDE TEMPORARY CONSTRUCTION FENCING IN THE LOCATIONS SHOWN ON THE PLANS.
- 24. ANY QUANTITIES SHOWN ON PLANS ARE FOR COMPARATIVE BIDDING PURPOSES ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VISIT THE PROJECT SITE TO VERIFY ALL QUANTITIES AND CONDITIONS PRIOR TO SUBMITTING BID.
- 25. CONTRACTOR'S STAGING AREA MUST BE IN AREAS APPROVED BY OWNER. ANY OTHER AREAS THAT THE CONTRACTOR MAY WISH TO USE FOR STAGING MUST BE COORDINATED WITH THE OWNER.

- 26. CONTRACTOR SHALL COORDINATE ALL WORK WITH THE OWNER.
- 27. THE LIMIT OF WORK SHALL BE DELINEATED IN THE FIELD PRIOR TO THE START OF SITE CLEARING OR CONSTRUCTION AND AGREED UPON WITH THE ENGINEER.
- 28. HAULING OF EARTH MATERIALS TO AND FROM THE SITE SHALL BE RESTRICTED TO THE HOURS OF 7 AM TO 5 PM.
- 29. ANY BOULDERS 3 CY OR SMALLER SHALL BE CONSIDERED UNDOCUMENTED FILL AND SHALL BE DISPOSED OF AT NO ADDITIONAL COST TO THE TOWN.
- 30. WORK ON WEEKENDS SHALL ONLY BE CONDUCTED IF PRIOR WRITTEN PERMISSION IS PROVIDED BY THE TOWN.
- 31. NO TRUCKS LEFT IDLING ON TOWN STREETS DURING CONSTRUCTION. CONSTRUCTION TRAFFIC AT NO TIME SHALL IMPEDE FLOW OF RESIDENT

#### DESIGN CODE COMPLIANCE:

NATIONAL ELECTRICAL CODE(NFPA70)	201
MASSACHUSETTS BUILDING CODE - 9TH EDITION	
248 CMR 10, MASSACHUSETTS FUEL GAS AND PLUMBING CODE	2017
527 CMR 12, MASSACHUSETTS ELECTRICAL CODE	2017
VIRGINIA GRAEME BAKER POOL AND SPA SAFETY ACT	2008
AMERICAN NATIONAL STANDARDS FOR PUBLIC POOLS - ANSI/NSPI-1	2014
105 CMR 435.00 MASSACHUSETTS MINIMUM STANDARDS FOR SWIMMING	
POOLS 1998	

### **ENGINEER SEAL**

- 1. THESE DRAWINGS HAVE BEEN PREPARED FOR EXCLUSIVE USE FOR THE CLIENT AND ARE NOT INTENDED FOR ANY OTHER PURPOSE. TO THE BEST OF MY KNOWLEDGE, THESE DRAWINGS MEET THE REQUIREMENTS SET FORTH BY THE MASSACHUSETTS STATE CODES.
- 2. THE FILTRATION AND RECIRCULATION SYSTEM THAT IS INCORPORATED INTO THESE DRAWINGS MUST BE CONSTRUCTED IN STRICT ACCORDANCE WITH THE APPROVED DRAWINGS. ALL CHANGES MUST HAVE WRITTEN APPROVAL FROM WESTON & SAMPSON PRIOR TO SUCH CHANGE OR ALTERATION BEING IMPLEMENTED.
- 3. ONLY DRAWINGS FROM WESTON & SAMPSON THAT ARE MARKED "FOR CONSTRUCTION" AND WITH THE DOH APPROVAL NUMBERS AND APPROVAL DATES AFFIXED SHALL BE USED FOR THE FILTRATION AND RECIRCULATION SYSTEM CONSTRUCTION IMPLEMENTATION.
- 4. THE ENGINEER SEAL AFFIXED TO THESE DRAWINGS IS LIMITED TO HYDRAULICS.
- 5. CONTRACTOR IS RESPONSIBLE FOR STAMPING BACKWASH TANKS BY A MASSACHUSETTS PROFESSIONAL ENGINEER.

## GENERAL START UP REQUIREMENTS

- 1. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE BALANCING OF THE WATER, AND STARTING UP THE EQUIPMENT, UNTIL FORMAL ACCEPTANCE BY OWNER.
- 2. CONTRACTOR SHALL PROVIDE DETAIL INSTRUCTIONS ON OPERATING THE EQUIPMENT, AND SHALL VIDEO TAPE THE ENTIRE TRAINING SESSION AND PROVIDE PERMANENT SIGNAGE ON VALVE, FILTER, AND SYSTEM

# **COORDINATION NOTES:**

THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF THE FOLLOWING ISSUES WITH THE GENERAL CONTRACTOR;

- CONNECT ALL METALLIC ITEMS FOUND WITHIN THE BOUNDS OF THE EQUIPMENT BOND, INTO THE EQUIPOTENTIAL BOND.
- CONFIGURE PUMP, BACKWASH PUMP, CONTROLS, UV, AND ALL LINE VOLTAGE WITH ELECTRICAL CONTRACTOR.

- ALL CONDUITS SHALL BE PVC.
- 2. ALL WIRING INSIDE THE FILTRATION SYSTEM EQUIPMENT AREA ROOM OR ENCLOSURE SHALL BE ENCASED IN APPROVED RIGID PVC CONDUIT.
- 3. ALL ELECTRICAL WORK (GFI'S, TRANSFORMERS, GROUNDING, ETC.) SHALL BE PROVIDED BY THE CONTRACTOR.
- 4. ALL ELECTRICAL EQUIPMENT AND INSTALLATIONS INCLUDING GROUNDING OF METAL EQUIPMENT ARE TO MEET OR EXCEED THE NATIONAL ELECTRICAL CODE, LATEST EDITION. ELECTRICALLY BOND AND GROUND EACH METALLIC DEVICE WITH A #8 SOLID COPPER "THWN" INSULATED GROUND WIRE IN ACCORDANCE WITH THE NEC REQUIREMENTS (AS WELL AS LOCAL CODES) APPLY SCOTCHCAST #2135 POTTING KIT (BY 3M) AT EACH

GROUNDING LUG, EQUIPMENT ATTACHMENT, AND REBAR JUNCTURE. ALL

# PIPING INSTALLATION REQUIREMENTS:

GROUND WIRES SHALL BE HIDDEN OR DISGUISED.

- ALL PIPING SHALL BE SCHEDULE 80 PVC UNLESS NOTED OTHERWISE. ALL PIPING SHALL BE STAMPED WITH THE MANUFACTURER'S MARKING THAT IT IS APPROVED FOR USE WITH POTABLE WATER (NSF-PW). PLASTIC PIPE EXPOSED TO SUNLIGHT SHALL BE COATED WITH EPOXY PAINT FOR UV PROTECTION.
- 2. THE PIPING DIAGRAMS AND SIZES SHOWN IN THESE DRAWINGS SHALL BE FOLLOWED WITHOUT EXCEPTION UNLESS WRITTEN AUTHORIZATION FROM THIS ENGINEER IS PROVIDED.
- THE PIPING SYSTEMS INDICATED IN THESE DRAWINGS ARE SHOWN IN A DIAGRAMMATIC VIEW ONLY. THE CONTRACTOR SHALL PROVIDE ALL PIPING AND FITTINGS REQUIRED FOR THE COMPLETE INSTALLATION.
- 4. THE CONTRACTOR SHALL PROVIDE AND COMPLY WITH ALL PIPING INSPECTIONS THAT MAY BE REQUIRED BY ENGINEER AND OWNER.
- 5. THE CONTRACTOR SHALL PROVIDE PIPE HANGER DETAILS TO THE ENGINEER FOR WRITTEN APPROVAL PRIOR TO THE INSTALLATION.
- 9. PIPING PRESSURE TESTING SHALL BE COORDINATED BY THE SWIMMING AREA CONTRACTOR AND SHALL BE INCLUDED IN THE COST. THE ENGINEER SHALL BE ONSITE DURING PRESSURE TESTING. ALL PIPING SHALL CONFORM TO ACCEPTED WORKMANSHIP STANDARDS AND SHALL BE TESTED AS FOLLOWS:
- i. ALL PIPING MUST BE TESTED BY MEANS OF WATER PRESSURE.
- ii. GRAVITY PIPING SHALL BE TESTED TO 10 PSI.

#### a. GRAVITY PIPING SHALL BE DEFINED AS DRAINAGE PIPING OR SENSING PIPING, OR ANY PIPING WHICH SHALL NOT HAVE FLOW VELOCITIES THAT EXCEED 3 FEET PER SECOND.

- iii. PRESSURE PIPING SHALL BE TESTED TO 50 PSI.
- a. PRESSURE PIPING SHALL BE DEFINED AS PUMP SUCTION PIPING, AND ANY PIPING AFTER THE PUMP DISCHARGE, OR ANY PIPING WHICH WILL HAVE FLOW VELOCITIES EXCEEDING 3 FEET PER SECOND.
- 10. EXTEND ALL PIPING TO ITS SPECIFIC FILTRATION SYSTEM. DO NOT CONNECT THE PIPING TO THE FILTRATION SYSTEM UNTIL THE PRESSURE-TEST IS COMPLETED, APPROVED, AND REMOVED FROM THE PIPING.

### **DEFINITIONS:**

- 1. CONTRACTOR: PERSON OR ENTITY AUTHORIZED TO CONSTRUCT, INSTALL AND OPERATE A COMMERCIAL POOL AND THEIR APPURTENANCES, AND MAINTAIN PROPER LICENSES TO DO SO.
- CRITICAL: THIS WORD DESCRIBES DIMENSIONS THAT SHALL NOT BE SUBJECT TO DEVIATION OR ERRORS FOR ANY REASON. VIOLATION OF A CRITICAL DIMENSION MIGHT SUBJECT THE FOUNTAIN TO A POTENTIAL VARIANCE ACTION OR A PERMANENT WITHHOLDING OF A FUTURE OPERATING CERTIFICATE. WESTON & SAMPSON CONSIDERS ALL DIMENSIONS CONTAINED WITH THE DRAWINGS AS VITAL: HOWEVER. THE WORD CRITICAL IS ADDED TO ATTRACT THE ATTENTION OF THE
- PROVIDE: OBTAIN, PURCHASE, SUPPLY, INSTALL AND WARRANTY COMPLETELY IN ACCORDANCE WITH ALL CODES, RULES, REGULATIONS AND THE REQUIREMENTS OF THE DRAWINGS AND TECHNICAL SPECIFICATIONS.

AC ACCMP	ASBESTOS CEMENT PIPE ASPHALT COATED
A D) /	ACORRUGATED METAL PIPE
ARV ASTM	AIR RELEASE VALVE AMERICAN SOCIETY FOR
7.011	TESTING AND MATERIALS
ВС	BITUMINOUS CONCRETE
BIT	BITUMINOUS
BLDG BM	BUILDING BENCH MARK
ВО	BLOW OFF
BV	BUTTERFLY VALVE
CATV CB	CABLE TELEVISION CATCH BASIN
CC	CONCRETE CURB
CI Q	CAST IRON
Ψ CL	CENTERLINE CEMENT LINED
CMP	CORRUGATED METAL PIPE
CONC CU FT	CONCRETE
COFI	CUBIC FEET CUBIC YARD
D	STORM DRAIN
DI	DROP INLET, DUCTILE IRON
DIA DMH	DIAMETER DRAIN MANHOLE
DWG	DRAWING
EA EF	EACH EACH FACE
ELEV	ELEVATION
EOP	EDGE OF PAVEMENT
EW EXIST	EACH WAY EXISTING
FLG	FLANGE
FT	FEET, FOOT
G GR	NATURAL GAS GRANITE
GALV	GALVANIZED
HC GC	HOUSE CONNECTION GRANITE CURB
HORIZ	HORIZONTAL
HP	HIGH PRESSURE
HYD INV	FIRE HYDRANT INVERT
ID	INSIDE DIAMETER
IP	IRON PIPE
LB LF	POUND LINEAR FEET
<b>L</b> S	LUMP SUM
MAX	MAXIMUM
MB MECH	MAIL BOX MECHANICAL
MH	MANHOLE
MIN	MINIMUM
MISC MJ	MISCELLANEOUS MECHANICAL JOINT
N	NORTH
NE	NORTH EAST
NW	NORTH WEST
NF	NOT FOUND
NO OR # OD	NUMBER OUTSIDE DIAMETER
PCCP	PRESTRESSED CONCRETE
PE	PLAIN END, POLYETHYLENE
P <sub>C</sub>	PROPERTY LINE
PL PVC	PLATE POLYVINYL CHLORIDE
PVMT	PAVEMENT
RCP	REINFORCED CONCRETE PIP
ROW	RIGHT-OF-WAY
RQD	ROCK QUALITY
S SE	SEWER SOUTH EAST
SECT	SECTION
SF	SQUARE FEET
SHT	SHEET
SPEC SQ FT	SPECIFICATIONS SQUARE FEET

TELEPHONE

THRESHOLD

**TYPICAL** 

VERTICAL

WITHOUT

WITH

THICK (NESS)

UTILITY POLE

WATER, WEST

VITRIFIED CLAY

STATION

STEEL

STA

STL

ΤH

TYP

UP

VC

VERT

SEWER SERVICE

SIDEWALK, SOUTH WEST

HYDROSTATIC THRUST,

TEMPORARY BENCH MARK

IMPROVEMENTS TO THE **ARLINGTON RESERVOIR** 



210 LOWELL ST, ARLINGTON, MA 02474

85 Devonshire Street, 3rd Floor Boston, MA 02109 617-412-4480 800.SAMPSON www.westonandsampson.com

Consultants:

Revisions Description No. Date 1/2/2019 REVISION #1 NOI SUBMISSION

Issued For:

NOI SUBMISSION

01/03/2019 Drawn By: Reviewed By Approved By: W&S Project No:

Drawing Title:

W&S File No:

**GENERAL NOTES** 

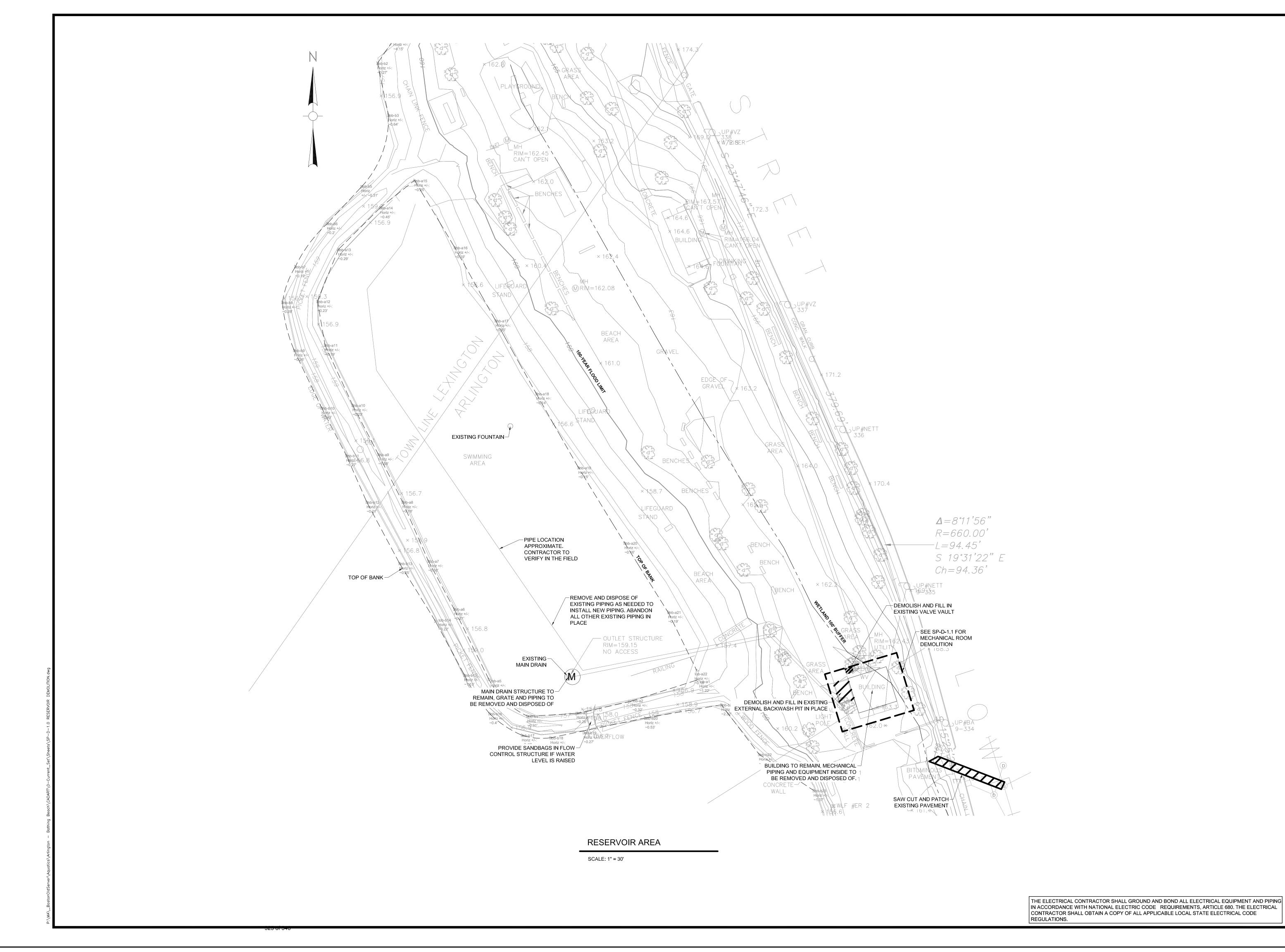
Sheet Number:

THE ELECTRICAL CONTRACTOR SHALL GROUND AND BOND ALL ELECTRICAL EQUIPMENT AND PIPING IN ACCORDANCE WITH NATIONAL ELECTRIC CODE REQUIREMENTS, ARTICLE 680. THE ELECTRICAL

CONTRACTOR SHALL OBTAIN A COPY OF ALL APPLICABLE LOCAL STATE ELECTRICAL CODE

REGULATIONS.

COPYRIGHT 2016 WESTON & SAMPSON



IMPROVEMENTS TO THE ARLINGTON RESERVOIR



210 LOWELL ST, ARLINGTON, MA 02474

Weston (&) Sampson ™

85 Devonshire Street, 3rd Floor, Boston, MA 02109 617-412-4480 800.SAMPSON www.westonandsampson.com

Consultants:

Revisions:

No. Date Description

1 1/2/2019 REVISION #1 NOI SUBMISSION

Seal:



Issued For:

NOI SUBMISSION

01/03/2019

Scale:

Drawn By: Reviewed By:

Approved By:

W&S Project No:

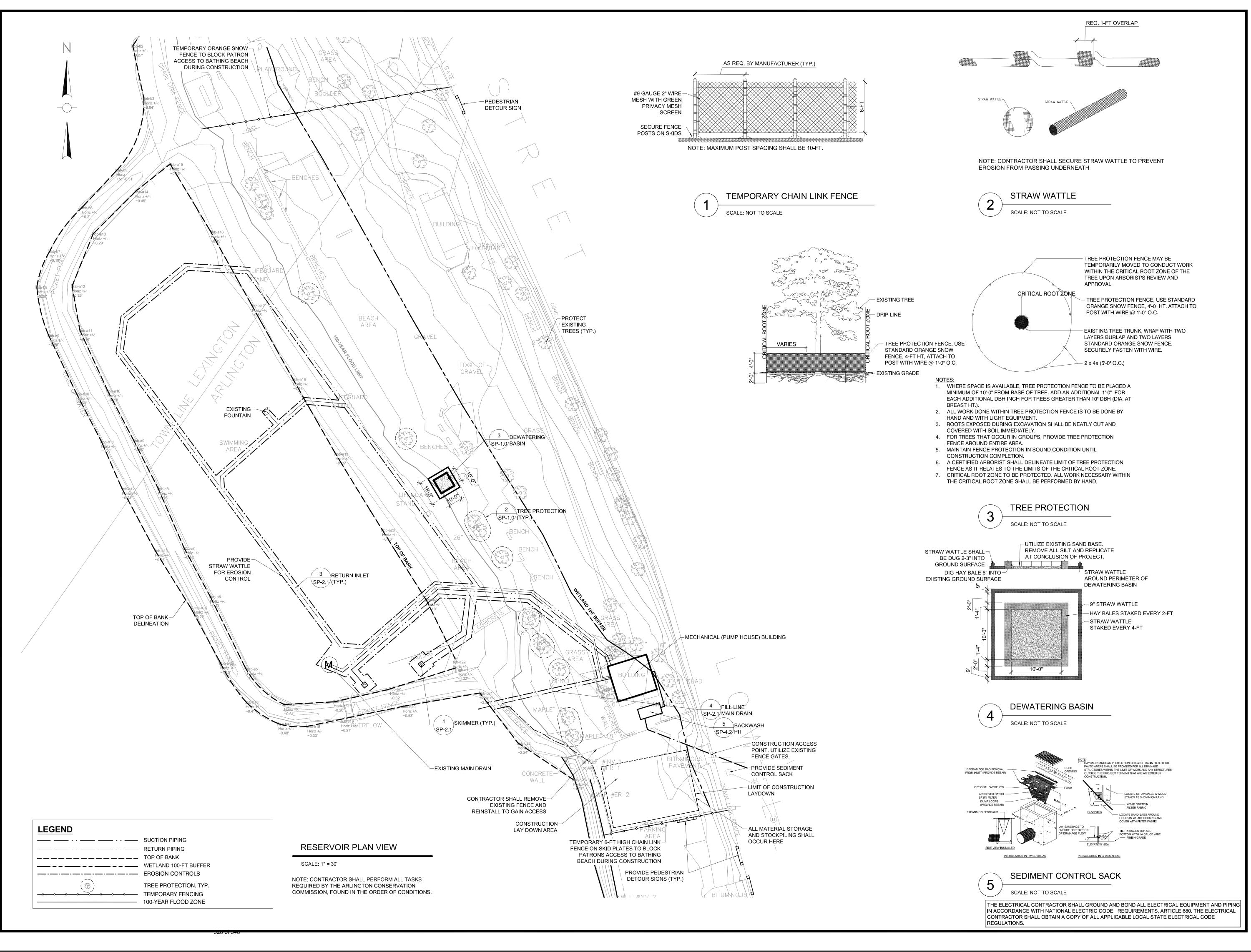
W&S Project No: 2

Drawing Title:

RESERVOIR SITE DEMOLITION

Sheet Number:

SP-D-1.0



Project:

IMPROVEMENTS TO THE ARLINGTON RESERVOIR



ARLINGTON, MA 02474

210 LOWELL ST,

Weston & Sampson

85 Devonshire Street, 3rd Floor, Boston, MA 02109 617-412-4480 800.SAMPSON www.westonandsampson.com

Consultants:

No. Date Description

1 1/2/2019 REVISION #1 NOI SUBMISSION

Seal:

NOI SUBMISSION

Issued For:

Date: 01/03/2019

Drawn By: MES

Reviewed By: SMB

Approved By: MPM

W&S Project No: W&S File No:

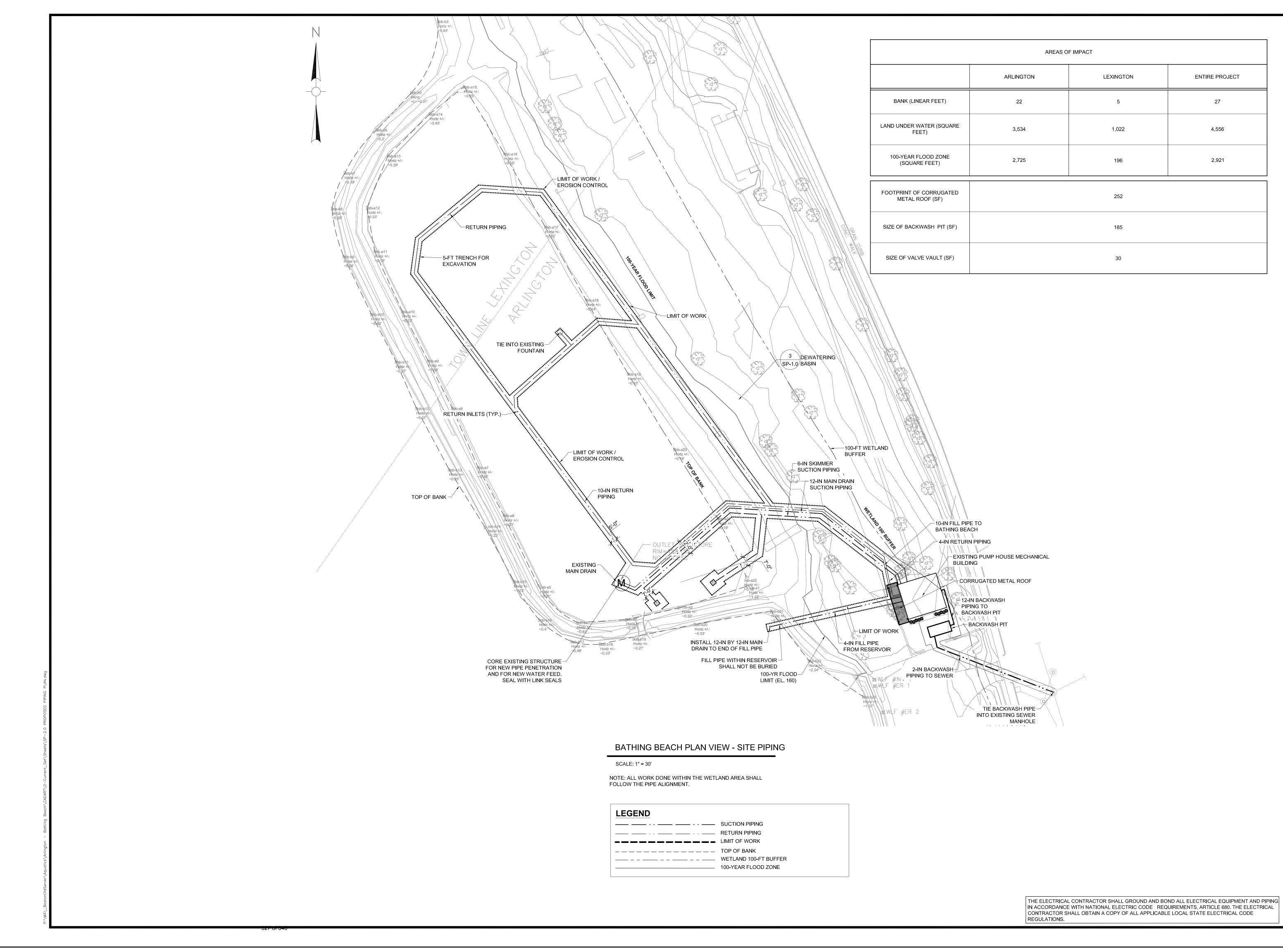
Drawing Title:

SITE LAYOUT AND TEMPORARY

**CONTROLS** 

Sheet Number:

SP-1.0



Project:

IMPROVEMENTS TO THE ARLINGTON RESERVOIR



Weston (&) Sampson ™

ARLINGTON, MA 02474

85 Devonshire Street, 3rd Floor, Boston, MA 02109 617-412-4480 800.SAMPSON www.westonandsampson.com

Consultants:

Revisions:

No. Date Description

1 1/2/2019 REVISION #1 NOI SUBMISSION



Issued For:

NOI SUBMISSION

Scale:

Date: 01/03/2019

Drawn By: MES

Reviewed By: SMB

Approved By: MPM

W&S Project No: 2160784

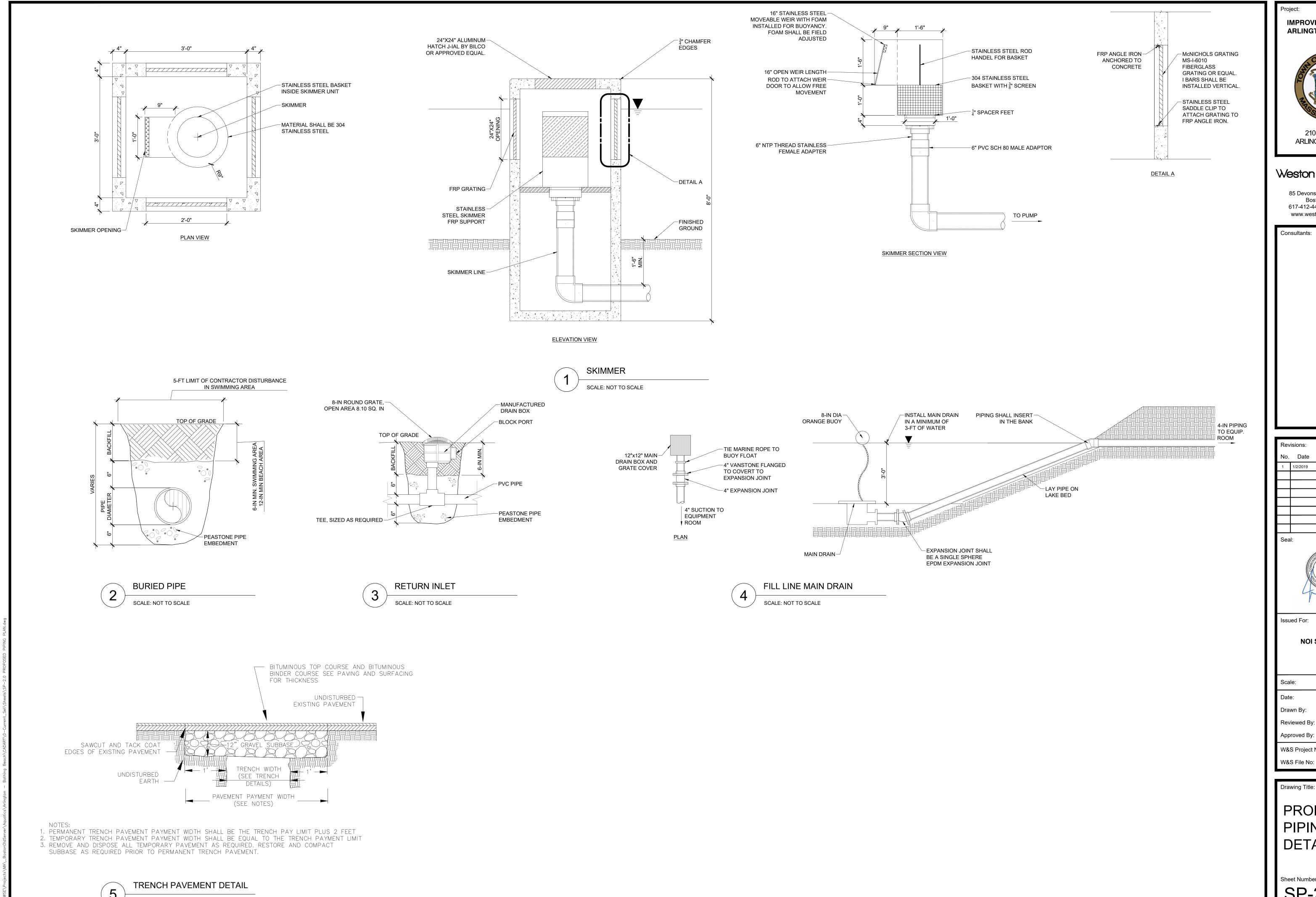
Drawing Title:

W&S File No:

PROPOSED PIPING PLAN

Sheet Number:

SP-2.0



SCALE: NOT TO SCALE

**IMPROVEMENTS TO THE ARLINGTON RESERVOIR** 210 LOWELL ST, ARLINGTON, MA 02474

# Weston & Sampson

85 Devonshire Street, 3rd Floor, Boston, MA 02109 617-412-4480 800.SAMPSON www.westonandsampson.com

Consultants:

Ι.									
	Rev	isions:							
	No.	Date	Description						
	1	1/2/2019	REVISION #1 NOI SUBMISSION						
	Sea	l:							
	MARK P MARIANO CIVIL No. 51945								
			MARK P KARIANO						
			No. 51945						

Issued For:

NOI SUBMISSION

01/03/2019 MES Reviewed By: SMB Approved By: W&S Project No: 2160784

Drawing Title:

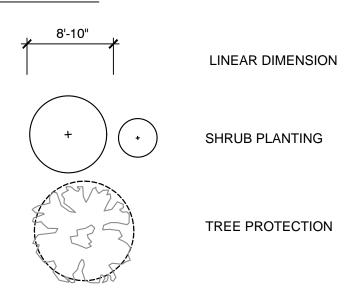
PROPOSED PIPING / SITE DETAILS

THE ELECTRICAL CONTRACTOR SHALL GROUND AND BOND ALL ELECTRICAL EQUIPMENT AND PIPING IN ACCORDANCE WITH NATIONAL ELECTRIC CODE REQUIREMENTS, ARTICLE 680. THE ELECTRICAL CONTRACTOR SHALL OBTAIN A COPY OF ALL APPLICABLE LOCAL STATE ELECTRICAL CODE

REGULATIONS.

SP-2.1

# LEGEND:



# PLANTING SCHEDULE:

ABRV. QTY BOTANICAL NAME COMMON NAME CONT. NOTES  CA 10 CORNUS ALTERNIFOLIA PAGODA DOGWOOD 5' HT. B&B	SHRUE	3S				
CA 10 CORNUS ALTERNIFOLIA PAGODA DOGWOOD 5' HT. B&B	ABRV.	QTY	BOTANICAL NAME	COMMON NAME	CONT.	NOTES
	CA	10	CORNUS ALTERNIFOLIA	PAGODA DOGWOOD	5' HT. B&B	

# **DEMOLITION & SITE PREPARATION NOTES**

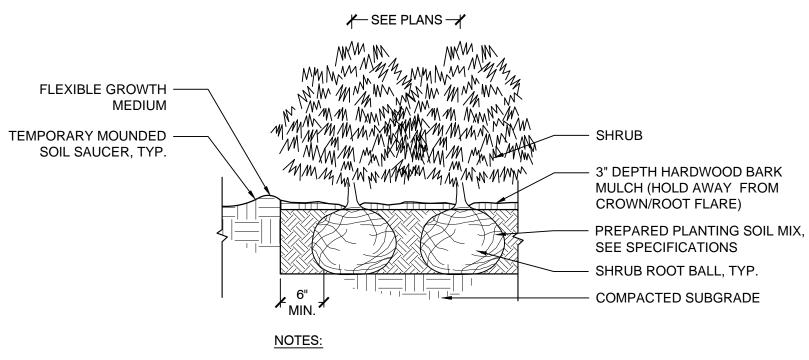
- 1. THE CONTRACTOR SHALL INCLUDE IN THE BID THE COST OF REMOVING ANY EXISTING SITE FEATURES AND APPURTENANCES NECESSARY TO ACCOMPLISH THE CONSTRUCTION OF THE PROPOSED SITE IMPROVEMENTS. THE CONTRACTOR SHALL ALSO INCLUDE IN THE BID THE COST NECESSARY TO RESTORE SUCH ITEMS IF THEY ARE SCHEDULED TO REMAIN AS PART OF THE FINAL SITE IMPROVEMENTS. REFER TO PLANS TO DETERMINE EXCAVATION AND DEMOLITION REQUIREMENTS AND TO DETERMINE THE LOCATION OF THE PROPOSED SITE IMPROVEMENTS.
- 2. THE OWNER RESERVES THE RIGHT TO REVIEW ALL MATERIALS DESIGNATED FOR REMOVAL AND TO RETAIN OWNERSHIP OF SUCH MATERIALS. IF THE OWNER RETAINS ANY MATERIAL THE CONTRACTOR SHALL MAKE ARRANGEMENTS WITH THE OWNER TO HAVE THOSE MATERIALS REMOVED OFF SITE TO A DESIGNATED MUNICIPAL PROPERTY AT NO ADDITIONAL COST. ALL GEOTECHNICALLY OR UNSUITABLE UNCONTAMINATED EXCESS SOIL FROM CONSTRUCTION ACTIVITIES SHALL BE DISPOSED OF BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE TOWN. REMOVAL ACTIVITIES SHALL BE ACCORDANCE WITH STATE AND LOCAL REGULATIONS AT NO ADDITIONAL COST TO THE TOWN.
- 3. UNLESS SPECIFICALLY NOTED TO BE REMOVED AND STOCKPILED (R&S) OR REUSED AND RELOCATED (R&R), ALL SITE FEATURES CALLED TO BE REMOVED AND DEMOLISHED (R&D) SHALL BE REMOVED WITH THEIR FOOTINGS, ATTACHMENTS, BASE MATERIAL, ETC. TRANSPORTED FROM THE SITE TO BE DISPOSED OF IN A LAWFUL MANNER AT AN ACCEPTABLE DISPOSAL SITE AND AT NO ADDITIONAL COST TO THE OWNER.
- 4. ALL EXISTING SITE FEATURES TO REMAIN SHALL BE PROTECTED THROUGHOUT THE CONSTRUCTION PERIOD. ANY FEATURES DAMAGED DURING CONSTRUCTION OPERATIONS SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER AND/OR OWNER'S REPRESENTATIVE AT NO ADDITIONAL COST.
- 5. DURING EARTHWORK OPERATIONS, CONTRACTOR SHALL TAKE CARE TO NOT DISTURB EXISTING MATERIALS TO REMAIN, OUTSIDE THE LIMITS OF EXCAVATION AND BACKFILL AND SHALL TAKE WHATEVER MEASURES NECESSARY, AT THE CONTRACTOR'S EXPENSE, TO PREVENT ANY EXCAVATED MATERIAL FROM COLLAPSING. ALL BACKFILL MATERIALS SHALL BE PLACED AND COMPACTED AS SPECIFIED TO THE SUBGRADE REQUIRED FOR THE INSTALLATION OF THE REMAINDER OF THE CONTRACT WORK.
- 6. THE CONTRACTOR SHALL PROTECT EXISTING TREES TO REMAIN. CONTRACTOR SHALL TAKE DUE CARE TO PREVENT INJURY TO TREES DURING CLEARING OPERATIONS.
- 7. THE STORAGE OF MATERIALS AND EQUIPMENT WILL BE PERMITTED AT LOCATIONS DESIGNATED BY OWNER OR OWNER'S REPRESENTATIVE. PROTECTION OF STORED MATERIALS AND EQUIPMENT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

# LAYOUT NOTES

- 1. COORDINATE ALL LAYOUT ACTIVITIES WITH THE SCOPE OF WORK CALLED FOR BY DEMOLITION, GRADING AND UTILITIES OPERATIONS ENCOMPASSED BY THIS CONTRACT. SET, PROTECT AND REPLACE REFERENCE STAKES AS NECESSARY OR AS REQUIRED BY THE OWNER'S REPRESENTATIVE.
- 2. THE LAYOUT OF SITE AMENITIES AND FENCES MUST BE APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
- 3. ALL PROPOSED SITE FEATURES SHALL BE LAID OUT AND STAKED FOR REVIEW AND APPROVAL BY THE OWNER'S REPRESENTATIVE PRIOR TO COMMENCEMENT OF INSTALLATION. ANY REQUIRED ADJUSTMENTS TO THE LAYOUT SHALL BE UNDERTAKEN AS DIRECTED, AT NO ADDITIONAL COST TO THE OWNER.
- 4. ALL PROPOSED PAVEMENTS SHALL MEET THE LINE AND GRADE OF EXISTING ADJACENT PAVEMENT SURFACES AND SHALL BE TREATED WITH AN RS-1 TACK COAT AT POINT OF CONNECTION. ALL PATHWAY WIDTHS SHALL BE AS NOTED ON THE LAYOUT AND MATERIALS PLAN.
- 5. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND GRADES ON THE GROUND AND REPORT ANY DISCREPANCIES IMMEDIATELY TO THE OWNER.
- 6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD MEASUREMENTS OF ALL PROPOSED FENCES, GATES.

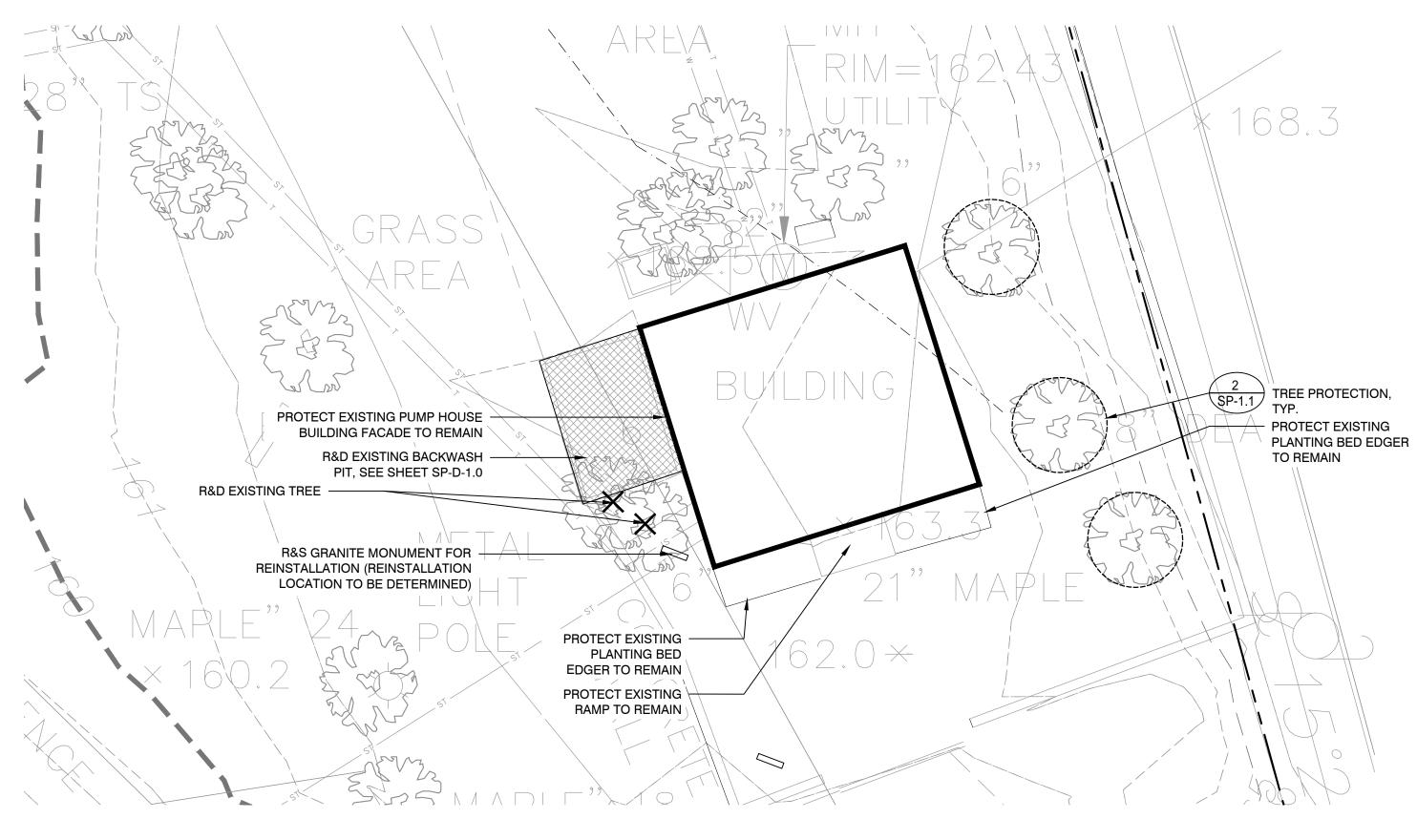
# **PLANTING NOTES:**

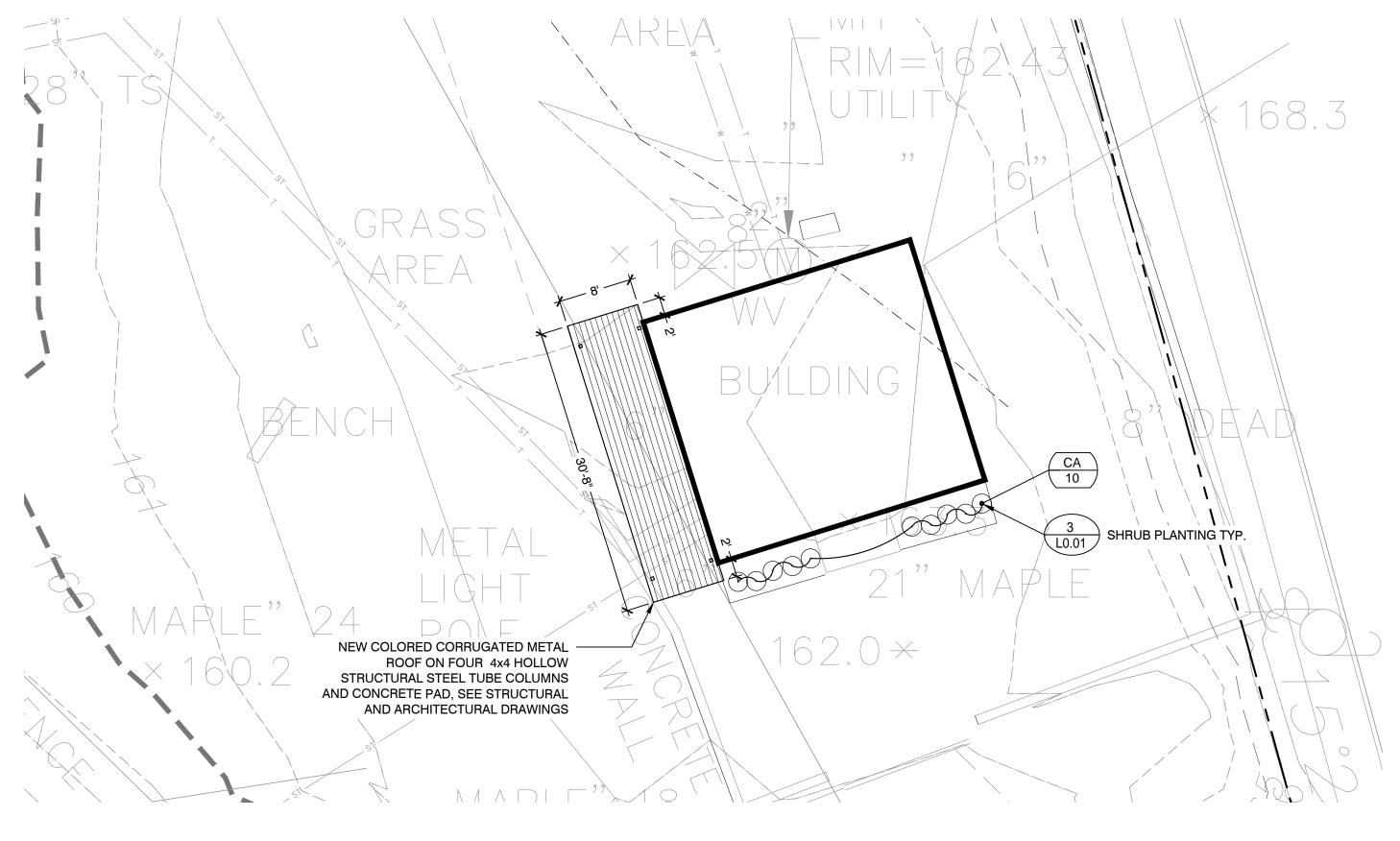
- 1. COORDINATE ALL PLANTING ACTIVITIES WITH THE SCOPE OF WORK CALLED FOR BY THE PLANS ENCOMPASSED BY THIS CONTRACT.
- 2. ALL PLANT MATERIAL SHALL BE TAGGED AND APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
- 3. THE CONTRACTOR SHALL IDENTIFY PROPOSED PLANT LOCATIONS PRIOR TO PLACEMENT WITH A STAKE AND COORDINATE WITH THE OWNER'S REPRESENTATIVE TO MAKE ANY NECESSARY ADJUSTMENTS BEFORE ACTUAL PLACEMENT. THE CONTRACTOR SHALL NOT PLACE NEW TREES DIRECTLY UNDER OVERHEAD WIRES OR ABOVE UTILITY LINES.
- 4. ALL EXISTING TREES TO REMAIN AND BE PROTECTED ARE TO BE PRUNED FOR CROWN CLEANING AND DEADWOOD REMOVAL.
- 5. PLANT LOCATIONS SHOWN ON THIS PLAN ARE APPROXIMATE ONLY AND SHALL BE APPROVED IN THE FIELD BY THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.



 ALL MULCH MUST BE DARK IN COLOR. PROVIDE SAMPLE PRIOR TO INSTALLATION TO BE APPROVED BY OWNER'S REPRESENTATIVE.



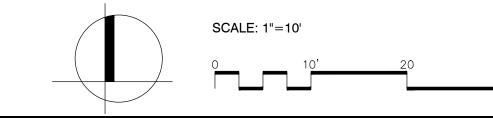




PUMP HOUSE LAYOUT, MATERIALS & PLANTING PLAN

SCALE: 1" = 10'-0"

PUMP HOUSE PLANTING SITE PREPARATION & DEMOLITION PLAN



IMPROVEMENTS TO THE ARLINGTON RESERVOIR

210 LOWELL ST, ARLINGTON, MA 02474

# Weston & Sampson

85 Devonshire Street, 3rd Floor, Boston, MA 02109 617-412-4480 800.SAMPSON www.westonandsampson.com

Consultants:								

Rev	risions:	
No.	Date	Description
1	1/2/2019	REVISION #1 NOI SUBMISSION



Issued For:

NOI SUBMISSION

Scale:	
Date:	01/03/2019
Drawn By:	СВВ
Reviewed By:	CFR
Approved By:	CFR
W&S Project No:	2160784

Drawing Title:

W&S File No:

PLANTING AT EXISTING PUMP HOUSE

Sheet Number:

L0.01



## **Massachusetts Department of Environmental Protection** Bureau of Resource Protection - Wetlands WPA Form 5 - Order of Conditions Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File # 091-0304 eDEP Transaction #

Arlington City/Town

A. Scheral Illionnation	A.	General	Information
-------------------------	----	---------	-------------

Please note: this form has been modified with added space to accommodate the Registry of Deeds Requirements

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



e. City/Town

5. Project Location:

a. Street Address

c. Assessors Map/Plat Number

Arlington Reservoir- Off Lowell Street

Latitude and Longitude, if known:

A. General Informatio	n	
1. From: Arlington Conservation Commission	on	
2. This issuance is for (check one):	a. Order of Conditions b. Amended	Order of Conditions
3. To: Applicant:		
Jon	Marshall	
a. First Name	b. Last Name	
Arlington Recreation Depart	ment	
c. Organization		* .
422 Summer Street		
d. Mailing Address		
Arlington	MA	02474
e. City/Town	f. State	g. Zip Code
4. Property Owner (if different fro	om applicant):	
a. First Name	b. Last Name	,
c. Organization		
d. Mailing Address		1

f. State

b. City/Town 1-4

42d25m47.12s

d. Latitude

Arlington/Lexington

d. Parcel/Lot Number

g. Zip Code

71d11m15.59s

e. Longitude



# WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP.	
MassDEP File #	
091-0304	
eDEP Transaction #	
Arlington	
City/Town	

A.	General	Information	(cont.)
			(00:10.)

6.	Property recorded at the Registry of Deeds for one parcel): Middlesex South						(attach additional information if more than				
	a. County						b. Certificate Number (if registered land)				
	c. Book	12/05/2018		-	01/		d. Page /2019			1/4/201	9
7.	Dates:	a. Date Notice of Inf	ent F	iled			Public Hearing Cl	osed		. Date of Issuanc	e
8.								ences			
	a. Plan Title						01 11 5				
	MES b. Prepared	Dv					Cherilyn Ruane c. Signed and Star		h		
	b. Prepared	Бу					c. Signed and Star 1"=80'	nped	БУ		
	d. Final Revi	ision Date				_	e. Scale	,			
	See Attac	hed							\	/arious	
	f. Additional	Plan or Document Tit	le						g	. Date	
В.	Finding	gs			,						
1.	Findings p	oursuant to the Ma	assa	chus	setts Wetl	and	ds Protection A	ct:			
	provided in the areas	the review of the n this application in which work is part (the Act). Ch	and prope	pres osed	ented at t is signific	the	public hearing	, this	Con	nmission finds	that
a.	⊠ Public	: Water Supply	b.		Land Co	nta	ining Shellfish	C.		Prevention of ution	
d.	□ Private	e Water Supply	e.		Fisheries	S		f.		Protection of Ilife Habitat	
g.	⊠ Groun	ndwater Supply	h.	$\boxtimes$	Storm Da	am	age Preventior	۱i.		Flood Control	
2.	This Commission hereby finds the project, as proposed, is: (check one of the following boxes)								xes)		
Аp	<b>proved</b> sub	oject to:									
a.	standards be perform General C that the fo	llowing conditions set forth in the wned in accordanc conditions, and ar allowing conditions submitted with the	etlar e wit ny ot s mo	nds rether so	egulations Notice of pecial co or differ fr	s. T of Ir ndi rom	This Commission tent reference tions attached the plans, spe	on or d ab to th ecific	ders ove, is Or ation	that all work s the following der. To the ex s, or other	



# WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP.
MassDEP File #
091-0304
eDEP Transaction #
Arlington

City/Town

# B. Findings (cont.)

<b>–</b> .	i iiidiiigs (cont.)								
Der	nied because:								
b.	the proposed work cannot be conditioned to meet the performance standards set forth in the wetland regulations. Therefore, work on this project may not go forward unless and until a new Notice of Intent is submitted which provides measures which are adequate to protect the interests of the Act, and a final Order of Conditions is issued. A description of the performance standards which the proposed work cannot meet is attached to this Order.								
c.	the information submitted by the applicant is not sufficient to describe the site, the work, or the effect of the work on the interests identified in the Wetlands Protection Act.  Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides sufficient information and includes measures which are adequate to protect the Act's interests, and a final Order of Conditions is issued. A description of the specific information which is lacking and why it is necessary is attached to this Order as per 310 CMR 10.05(6)(c).								
3.	☐ Buffer Zone Impacts: Shortest distance between limit of project disturbance and the wetland resource area specified in 310 CMR 10.02(1)(a)  a. linear feet								
Inla	Inland Resource Area Impacts: Check all that apply below. (For Approvals Only)								
Res	source Area	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement				

Re	esource Area	Proposed Alteration	Alteration Alteration		Permitted Replacement	
4.	⊠ Bank	22 a. linear feet	b. linear feet	c. linear feet	d. linear feet	
5.	Bordering	a. midai idat	b. iiiledi leet	o. iiildai idat	d. Illical loct	
	Vegetated Wetland	a. square feet	b. square feet	c. square feet	d. square feet	
6.		3534	3534			
	Waterbodies and	a. square feet	b. square feet	c. square feet	d. square feet	
	Waterways	0	0			
		e. c/y dredged	f. c/y dredged			
7.	⊠ Bordering Land	2725	2725			
	Subject to Flooding	a. square feet	b. square feet	c. square feet	d. square feet	
	Out in Frank Flored Ottom	0	0			
	Cubic Feet Flood Storage	e. cubic feet	f. cubic feet	g. cubic feet	h. cubic feet	
8.	☐ Isolated Land					
	Subject to Flooding	a. square feet	b. square feet			
	Cubic Feet Flood Storage	c. cubic feet	d. cubic feet	e. cubic feet	f. cubic feet	
9.	☐ Riverfront Area	a. total sq. feet	b. total sq. feet			
	Sq ft within 100 ft	c. square feet	d. square feet	e. square feet	f. square feet	
	Sq ft between 100-					
	200 ft	g. square feet	<ul> <li>h. square feet</li> </ul>	i. square feet	j. square feet	



# WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File #
091-0304
eDEP Transaction #
Arlington
City/Town

# B. Findings (cont.)

Coastal Resource Area Impacts: Check all that apply below. (For Approvals Only)					
	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement	
10. Designated Port Areas	Indicate size u	nder Land Unde	er the Ocean, bel	WC	
11.    Land Under the Ocean	a. square feet	b. square feet			
	c. c/y dredged	d. c/y dredged			
12. Barrier Beaches	Indicate size u below	nder Coastal Be	eaches and/or Co	astal Dunes	
13. Coastal Beaches	a aguara foot	b. square feet	cu yd c. nourishment	d. nourishment	
	a. square feet	b. square reet	c. nourishment	cu yd	
14. Coastal Dunes	a. square feet	b. square feet	c. nourishment	d. nourishment	
15. Coastal Banks	a. linear feet	b. linear feet			
16. Rocky Intertidal Shores	a. square feet	b. square feet			
17. Salt Marshes	a. square feet	b. square feet	c. square feet	d. square feet	
18.	a. square feet	b. square feet		1	
	c. c/y dredged	d. c/y dredged			
<ul><li>19.</li></ul>	a. square feet	b. square feet	c. square feet	d. square feet	
20. Fish Runs		d/or inland Land	anks, Inland Bank I Under Waterboo		
21. Land Subject to	a. c/y dredged	b. c/y dredged			
Coastal Storm Flowage	a. square feet	b. square feet			
22. Riverfront Area	a. total sq. feet	b. total sq. feet			
Sq ft within 100 ft	c. square feet	d. square feet	e. square feet	f. square feet	
Sq ft between 100- 200 ft	g. square feet	h. square feet	i. square feet	j. square feet	



# WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

MassDEP File #
091-0304
eDEP Transaction #
Arlington
City/Town

Provided by MassDEP:

Massachusetts Wetlands Protection Act M.G.L. C. 131, 940

	B.	Findings (cont.)				
* #23. If the project is for the purpose of	23.	Restoration/Enhancement *:				
restoring or enhancing a		a. square feet of BVW	b. square feet of salt marsh			
wetland resource area in addition to	24.	Stream Crossing(s):				
the square footage that		a. number of new stream crossings	b. number of replacement stream crossings			
has been entered in Section B.5.c (BVW) or B.17.c (Salt		General Conditions Under Massachu e following conditions are only applicable to				
Marsh) above, please enter the additional amount here.	2.	Failure to comply with all conditions stated herein, and with all related statutes and other regulatory measures, shall be deemed cause to revoke or modify this Order.  The Order does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of private rights.  This Order does not relieve the permittee or any other person of the necessity of complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.				
	4.	but less than five years, from the date of is for more than three years, the extension da the extended time period are set forth as a	et as provided for in the Act; or d to a specified date more than three years, suance. If this Order is intended to be valid ate and the special circumstances warranting			
	5.	This Order may be extended by the issuing authorized years each upon application to the issuing authorized of the Order. An Order of Conditions for a additional year only upon written application by CMR 10.05(11)(f).	ority at least 30 days prior to the expiration Test Project may be extended for one			

- 6. If this Order constitutes an Amended Order of Conditions, this Amended Order of Conditions does not extend the issuance date of the original Final Order of Conditions and the Order will expire on <a href="https://doi.org/10.1001/journal.org/10
- 7. Any fill used in connection with this project shall be clean fill. Any fill shall contain no trash, refuse, rubbish, or debris, including but not limited to lumber, bricks, plaster, wire, lath, paper, cardboard, pipe, tires, ashes, refrigerators, motor vehicles, or parts of any of the foregoing.



### **WPA Form 5 – Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File #
091-0304
eDEP Transaction #
Arlington
City/Town

### C. General Conditions Under Massachusetts Wetlands Protection Act

- 8. This Order is not final until all administrative appeal periods from this Order have elapsed, or if such an appeal has been taken, until all proceedings before the Department have been completed.
- 9. No work shall be undertaken until the Order has become final and then has been recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land upon which the proposed work is to be done. In the case of the registered land, the Final Order shall also be noted on the Land Court Certificate of Title of the owner of the land upon which the proposed work is done. The recording information shall be submitted to the Conservation Commission on the form at the end of this Order, which form must be stamped by the Registry of Deeds, prior to the commencement of work.
- 10. A sign shall be displayed at the site not less then two square feet or more than three square feet in size bearing the words,

"Massachusetts Department o	of Environmental Protection"	[or, "MassDEP"]
-----------------------------	------------------------------	-----------------

"Fil	اما	N	ıım	ber	
ГΠ		ıv	UHI	UCI	

091-0304

- 11. Where the Department of Environmental Protection is requested to issue a Superseding Order, the Conservation Commission shall be a party to all agency proceedings and hearings before MassDEP.
- 12. Upon completion of the work described herein, the applicant shall submit a Request for Certificate of Compliance (WPA Form 8A) to the Conservation Commission.
- 13. The work shall conform to the plans and special conditions referenced in this order.
- 14. Any change to the plans identified in Condition #13 above shall require the applicant to inquire of the Conservation Commission in writing whether the change is significant enough to require the filing of a new Notice of Intent.
- 15. The Agent or members of the Conservation Commission and the Department of Environmental Protection shall have the right to enter and inspect the area subject to this Order at reasonable hours to evaluate compliance with the conditions stated in this Order, and may require the submittal of any data deemed necessary by the Conservation Commission or Department for that evaluation.
- 16. This Order of Conditions shall apply to any successor in interest or successor in control of the property subject to this Order and to any contractor or other person performing work conditioned by this Order.



### **WPA Form 5 – Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

MassDEP File #
091-0304
eDEP Transaction #
Arlington

City/Town

Provided by MassDEP:

### C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

- 17. Prior to the start of work, and if the project involves work adjacent to a Bordering Vegetated Wetland, the boundary of the wetland in the vicinity of the proposed work area shall be marked by wooden stakes or flagging. Once in place, the wetland boundary markers shall be maintained until a Certificate of Compliance has been issued by the Conservation Commission.
- 18. All sedimentation barriers shall be maintained in good repair until all disturbed areas have been fully stabilized with vegetation or other means. At no time shall sediments be deposited in a wetland or water body. During construction, the applicant or his/her designee shall inspect the erosion controls on a daily basis and shall remove accumulated sediments as needed. The applicant shall immediately control any erosion problems that occur at the site and shall also immediately notify the Conservation Commission, which reserves the right to require additional erosion and/or damage prevention controls it may deem necessary. Sedimentation barriers shall serve as the limit of work unless another limit of work line has been approved by this Order.

19.	The wo	rk associated with this Order (the "Project")
	(1)	is subject to the Massachusetts Stormwater Standards
	(2)	is NOT subject to the Massachusetts Stormwater Standards

# If the work is subject to the Stormwater Standards, then the project is subject to the following conditions:

- a) All work, including site preparation, land disturbance, construction and redevelopment, shall be implemented in accordance with the construction period pollution prevention and erosion and sedimentation control plan and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Construction General Permit as required by Stormwater Condition 8. Construction period erosion, sedimentation and pollution control measures and best management practices (BMPs) shall remain in place until the site is fully stabilized.
- b) No stormwater runoff may be discharged to the post-construction stormwater BMPs unless and until a Registered Professional Engineer provides a Certification that: *i.* all construction period BMPs have been removed or will be removed by a date certain specified in the Certification. For any construction period BMPs intended to be converted to post construction operation for stormwater attenuation, recharge, and/or treatment, the conversion is allowed by the MassDEP Stormwater Handbook BMP specifications and that the BMP has been properly cleaned or prepared for post construction operation, including removal of all construction period sediment trapped in inlet and outlet control structures; *ii.* as-built final construction BMP plans are included, signed and stamped by a Registered Professional Engineer, certifying the site is fully stabilized;

*iii.* any illicit discharges to the stormwater management system have been removed, as per the requirements of Stormwater Standard 10;



## WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File #
091-0304
eDEP Transaction #
Arlington
City/Town

### C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

*iv.* all post-construction stormwater BMPs are installed in accordance with the plans (including all planting plans) approved by the issuing authority, and have been inspected to ensure that they are not damaged and that they are in proper working condition;

*v.* any vegetation associated with post-construction BMPs is suitably established to withstand erosion.

- c) The landowner is responsible for BMP maintenance until the issuing authority is notified that another party has legally assumed responsibility for BMP maintenance. Prior to requesting a Certificate of Compliance, or Partial Certificate of Compliance, the responsible party (defined in General Condition 18(e)) shall execute and submit to the issuing authority an Operation and Maintenance Compliance Statement ("O&M Statement) for the Stormwater BMPs identifying the party responsible for implementing the stormwater BMP Operation and Maintenance Plan ("O&M Plan") and certifying the following:
  - i.) the O&M Plan is complete and will be implemented upon receipt of the Certificate of Compliance, and
  - ii.) the future responsible parties shall be notified in writing of their ongoing legal responsibility to operate and maintain the stormwater management BMPs and implement the Stormwater Pollution Prevention Plan.
- d) Post-construction pollution prevention and source control shall be implemented in accordance with the long-term pollution prevention plan section of the approved Stormwater Report and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Multi-Sector General Permit.
- e) Unless and until another party accepts responsibility, the landowner, or owner of any drainage easement, assumes responsibility for maintaining each BMP. To overcome this presumption, the landowner of the property must submit to the issuing authority a legally binding agreement of record, acceptable to the issuing authority, evidencing that another entity has accepted responsibility for maintaining the BMP, and that the proposed responsible party shall be treated as a permittee for purposes of implementing the requirements of Conditions 18(f) through 18(k) with respect to that BMP. Any failure of the proposed responsible party to implement the requirements of Conditions 18(f) through 18(k) with respect to that BMP shall be a violation of the Order of Conditions or Certificate of Compliance. In the case of stormwater BMPs that are serving more than one lot, the legally binding agreement shall also identify the lots that will be serviced by the stormwater BMPs. A plan and easement deed that grants the responsible party access to perform the required operation and maintenance must be submitted along with the legally binding agreement.
- f) The responsible party shall operate and maintain all stormwater BMPs in accordance with the design plans, the O&M Plan, and the requirements of the Massachusetts Stormwater Handbook.



### **WPA Form 5 – Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

MassDEP File #
091-0304
eDEP Transaction #

Provided by MassDEP:

Arlington City/Town

City/Town

C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

- g) The responsible party shall:
  - 1. Maintain an operation and maintenance log for the last three (3) consecutive calendar years of inspections, repairs, maintenance and/or replacement of the stormwater management system or any part thereof, and disposal (for disposal the log shall indicate the type of material and the disposal location);
  - 2. Make the maintenance log available to MassDEP and the Conservation Commission ("Commission") upon request; and
  - 3. Allow members and agents of the MassDEP and the Commission to enter and inspect the site to evaluate and ensure that the responsible party is in compliance with the requirements for each BMP established in the O&M Plan approved by the issuing authority.
- h) All sediment or other contaminants removed from stormwater BMPs shall be disposed of in accordance with all applicable federal, state, and local laws and regulations.
- i) Illicit discharges to the stormwater management system as defined in 310 CMR 10.04 are prohibited.
- j) The stormwater management system approved in the Order of Conditions shall not be changed without the prior written approval of the issuing authority.
- k) Areas designated as qualifying pervious areas for the purpose of the Low Impact Site Design Credit (as defined in the MassDEP Stormwater Handbook, Volume 3, Chapter 1, Low Impact Development Site Design Credits) shall not be altered without the prior written approval of the issuing authority.
- Access for maintenance, repair, and/or replacement of BMPs shall not be withheld.
   Any fencing constructed around stormwater BMPs shall include access gates and shall be at least six inches above grade to allow for wildlife passage.

Special Conditions (if you need more space for additional conditions, please attach a text document):

See Attached Findings and Conditions					
					-

20. For Test Projects subject to 310 CMR 10.05(11), the applicant shall also implement the monitoring plan and the restoration plan submitted with the Notice of Intent. If the conservation commission or Department determines that the Test Project threatens the public health, safety or the environment, the applicant shall implement the removal plan submitted with the Notice of Intent or modify the project as directed by the conservation commission or the Department.



# **WPA Form 5 – Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP.
MassDEP File #
091-0304
eDEP Transaction #
Arlington
City/Town

D. Findings Under Municipal Wetlands Bylaw or Ordinance

1.	ls a	municipal wetlands bylaw or ordinance a	pplicable?	Yes	☐ No	
2.	The	Arlington Conservation Commission	here	by finds (c	heck one	that applies):
	a.	that the proposed work cannot be cormunicipal ordinance or bylaw, specifically		neet the s	tandards s	et forth in a
		1. Municipal Ordinance or Bylaw				2. Citation
	Therefore, work on this project may not go forward unless and unti Intent is submitted which provides measures which are adequate t standards, and a final Order of Conditions is issued.					
	b.  that the following additional conditions are necessary to comply					municipal
		ordinance or bylaw: Arlington Bylaw for Wetlands Protection  1. Municipal Ordinance or Bylaw		_		Title V, Art 8
3.	con con	Commission orders that all work shall be ditions and with the Notice of Intent refere ditions modify or differ from the plans, spendice of Intent, the conditions shall continued to the plans of the conditions of the continued to the conditions shall continued to the conditions of t	enced above ecifications,	e. To the e	xtent that t	ne following the following
	The mor	special conditions relating to municipal of e space for additional conditions, attach a Attached Findings and Conditions	ordinance or		as follows	(if you need
		· ·				
			. ~			
		/	-			
		E				



### **WPA Form 5 – Order of Conditions**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File # 091-0304

eDEP Transaction #

Arlington City/Town

# E. Signatures

This Order is valid for three years, unless otherwise specified as a special condition pursuant to General Conditions #4, from the date of issuance.

Please indicate the number of members who will sign this form.

This Order must be signed by a majority of the Conservation Commission.

1/4/2019 1. Date of Issuance

2. Number of Signers

The Order must be mailed by certified mail (return receipt requested) or hand delivered to the applicant. A copy also must be mailed or hand delivered at the same time to the appropriate Department of Environmental Protection Regional Office, if not filing electronically, and the property owner, if different from applicant.

Signatures:

by hand delivery on

1/4/2019

by certified mail, return receipt requested, on

Date

# F. Appeals

The applicant, the owner, any person aggrieved by this Order, any owner of land abutting the land subject to this Order, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate MassDEP Regional Office to issue a Superseding Order of Conditions. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and a completed Request for Departmental Action Fee Transmittal Form, as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Order. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.

Any appellants seeking to appeal the Department's Superseding Order associated with this appeal will be required to demonstrate prior participation in the review of this project. Previous participation in the permit proceeding means the submission of written information to the Conservation Commission prior to the close of the public hearing, requesting a Superseding Order, or providing written information to the Department prior to issuance of a Superseding Order.

The request shall state clearly and concisely the objections to the Order which is being appealed and how the Order does not contribute to the protection of the interests identified in the Massachusetts Wetlands Protection Act (M.G.L. c. 131, § 40), and is inconsistent with the wetlands regulations (310 CMR 10.00). To the extent that the Order is based on a municipal ordinance or bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.



## WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File #
091-0304
eDEP Transaction #
Arlington

City/Town

## G. Recording Information

Prior to commencement of work, this Order of Conditions must be recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land subject to the Order. In the case of registered land, this Order shall also be noted on the Land Court Certificate of Title of the owner of the land subject to the Order of Conditions. The recording information on this page shall be submitted to the Conservation Commission listed below.

Arlington  Conservation Commission						
Detach on dotted line, have stamped by the Registr	y of Deeds and submit	t to the Conservation				
Commission.						
То:						
Arlington		7				
Conservation Commission						
Please be advised that the Order of Conditions for	the Project at:					
Arlington Reservoir- Off Lowell Street	091-0304					
Project Location	MassDEP File Number					
Has been recorded at the Registry of Deeds of:						
Middlesex South						
County	Book	Page				
for: Property Owner						
	to all associates the					
and has been noted in the chain of title of the affect	etea property in:					
Book	Page	· · · · · · · · · · · · · · · · · · ·				
In accordance with the Order of Conditions issued	on:					
Date	<i>V</i> -	1				
If recorded land, the instrument number identifying	this transaction is:					
In the control of the						
Instrument Number						
If registered land, the document number identifying this transaction is:						
Document Number						
Signature of Applicant						

APPROVAL ORDER OF CONDITIONS

ARLINGTON RESERVOIR BEACH IMPROVEMENTS

DEP FILE NO. 091-0304

### **DOCUMENTS REVIEWED**

- 1. Notice of Intent for Arlington Reservoir Bathing Beach Improvements and Walk Path Improvement Pilot Test, Arlington, MA, prepared by Weston & Sampson, for the Applicant: Town of Arlington Recreation Department, dated December 5, 2018.
- 2. Stormwater Report, prepared by James I. Pearson, P.E., dated December 3, 2018.
- 3. Construction Period Pollution Prevention and Erosion and Sediment Control Plan, prepared by Weston & Sampson, not dated.
- 4. Locus Map, prepared by Weston and Sampson, not dated.
- 5. Environmental Receptors Map, prepared by Weston & Sampson, not dated.
- 6. FEMA National Flood Hazard Layer FIRMette, prepared by Weston & Sampson, dated October 18, 2018.
- 7. Dust Control SOP, prepared by Weston & Sampson, dated 07/12/2012.
- 8. Environmental Protection SOP, prepared by Weston & Sampson, dated 8/25/2016.
- 9. Cleaning Up SOP, prepared by Weston & Sampson, dated 1/24/2018.
- 10. Wetland Delineation Report for the Arlington Reservoir, prepared by Weston & Sampson, dated 10/08/2018.
- 11. Town of Arlington Improvements to the Arlington Reservoir Plan Set, prepared by Weston & Sampson, stamped by Cherilyn Ruane RLA, Daniel Tenney RA, and Jeffrey Budrow PE, dated 11/20/2018, revised 01/03/2019.

### PROCEDURAL SUMMARY

The Conservation Commission held a public hearing on the Notice of Intent on December 20, 2018. The Commission closed the hearing on January 3, 2019, deliberated and voted 6-0, with 1 member absent, to approve the Project with conditions under the Wetlands Protection Act (the "Act") and voted 6-0, with 1 member absent, to approve the Project with conditions under the Arlington Wetlands Protection Bylaw (the "Bylaw").

FINDINGS OF FACT AND LAW
UNDER ARLINGTON WETLANDS PROTECTION BYLAW
AND WETLANDS PROTECTION ACT

**APPROVAL** ORDER OF CONDITIONS

ARLINGTON RESERVOIR BEACH IMPROVEMENTS

DEP FILE NO. 091-0304

- A. The Project as approved involves renovating the bathing beach's pump house through the installation of a sand filter system, suction system renovation, liquid chlorine pump upgrade, UV filtration system installation, skimming system installation, filter return system installation, and general building upgrades and weather-proofing. The pipe system and water filtration infrastructure under the beach will be upgraded. The project also includes the removal of an outdoor tank, which will require excavation and fill. The fill will consist of crushed rock. Once removed, the tank will be replace by a 30'-8" x 8' corrugated metal roof. No impervious surfaces will be created below the corrugated metal roof. Due to roof construction, 2 mulberry trees will be removed and replaced with 10 pagoda dogwoods.
- B. The Project site contains approximately 2,725 square feet of temporary impact in Bordering Land Subject to Flooding/100 Year Flood Zone. Approximately 22 linear feet of bank will also be temporarily impacted. Approximately 3,534 square feet of land under waterbodies and waterways will be temporarily impacted.
- C. The following Resource Areas are present on the site or within 100 feet of the project limit of work: Land Under Waterbodies and Waterways (Act), Bank (Act), Buffer Zone (Act) to Bank, Bordering Land Subject to Flooding (Act), and 100 Year Flood Zone (Act). The Commission finds accurate the delineation of Resource Areas shown on the approved Site Plan.
- D. Flood zone volume and grading will be the same upon project completion as it was during pre-construction conditions, so compensatory storage is not required. No volume will be added within the flood zone.
- E. The Project as approved is subject to the Massachusetts Stormwater Standards.
- F. Because work proposed does not increase impervious surface, the Commission finds the project meets the performance standards for the aforementioned Resource Areas.
- G. Based on the testimony at the public hearing, and review of the application materials and the documents listed above submitted during the public hearing, the Commission concludes that the proposed Project will not alter Resource Areas under the Act and Bylaw, the work as conditioned will not have significant or cumulative effects upon the interests of the Wetlands Protection Act or the Resource Area values of the Arlington Wetlands Bylaw when the conditions imposed are implemented to protect the Resource Area values. With the conditions contained herein, the Project meets the performance standards in the Bylaw Regulations and state Wetlands Regulations, 310 CMR 10.00.

### Additional Special Conditions

In addition to the General Conditions (numbered 1-20 above), the Project is subject to the following Additional Special Conditions (under both the Act and Bylaw):

**APPROVAL** ORDER OF CONDITIONS

ARLINGTON RESERVOIR BEACH IMPROVEMENTS

DEP FILE NO. 091-0304

#### **Pre-Construction**

- 21. Work permitted by this Order and Permit shall conform to the Notice of Intent, the approved plans and documents (listed above), and oral representations (as recorded in hearing minutes) submitted or made by the Applicant and the Applicant's agents or representatives, as well as any plans and other data, information or representations submitted per these Conditions and approved by the Commission.
- 22. The provisions of this Order and Permit shall apply to and be binding upon the Applicant and Applicant's assignees, tenants, property management company, employees, contractors, and agents.
- 23. No work shall be started under this Order until: (a) all other required permits or approvals have been obtained and (b) the appeal period of ten (10) business days from the date of issue of this Order has expired without any appeal being filed and (c) this Order has been recorded in the Registry of Deeds. No work shall be started under this Permit until all other necessary permits or approvals have been obtained.
- 24. The Applicant shall ensure that a copy of this Order of Conditions and Permit for work, with any referenced plans, is available on site at all times, and that contractors, site managers, foremen, and sub-contractors understand its provisions.
- 25. Prior to starting work, the Applicant shall submit to the Commission the names and 24-hour phone numbers of project managers or the persons responsible for site work or mitigation.
- 26. Before work begins, erosion and sediment controls shall be installed at the limits of the work area. These will include a silt fence and 12 inch straw or silt wattle around the entire work area (hay bales are not allowed and silt socks are preferred).
- 27. The Applicant shall complete the proposed work during low flow conditions only.
- 28. The contractor shall contact the Conservation Agent (concomm@town.arlington.ma.us; 781-316-3012) to arrange for a pre-construction meeting with the on-site project manager to walk through the Order of Conditions, confirm the wash out location, and walk the site to confirm the installation and placement of erosion controls prior to the start of any grading or construction work.
- 29. The contractor shall provide written Notice of the work start date to the Conservation Agent 48 hours prior to start of work.
- 30. The Commission, its employees, and its agents shall have the right of entry onto the site to inspect for compliance with the terms of this Order of Conditions and Permit until a Certificate of Compliance has been issued.

#### **Post-Construction**

31. When requesting a Certificate of Compliance for this Order of Conditions, the Applicant must submit a written statement from a Massachusetts professional engineer, registered land surveyor, or registered landscape architect certifying that the completed work complies with the plans referenced in this Order, or provide an as-built plan and statement describing any differences.

APPROVAL ORDER OF CONDITIONS

ARLINGTON RESERVOIR BEACH IMPROVEMENTS

DEP FILE NO. 091-0304

### **Dumpsters**

32. All dumpsters must be covered at the end of each work day, and no dumpsters will be allowed overnight within the 100 foot Buffer Zone or Adjacent Upland Resource Areas ("AURA") or other Resource Areas.

### Stockpiling

33. No uncovered stockpiling of materials shall be permitted overnight within 100 feet of any waterway or water body. Stockpiling shall occur only where noted on approved plans.

#### **Erosion**

34. Areas that are disturbed by construction and access activities shall as soon as possible be brought to final grade and reseeded and restabilized, and shall be done so prior to the removal of the erosion control barrier. Erosion control measures shall be installed per the approved plans.

### Equipment

- No heavy equipment may be stored overnight within 50 feet of the wetland and no refueling or maintenance of machinery shall be allowed within the 100-foot Buffer Zone, 200-foot Resource Area, and Adjacent Upland Resource Area or within any Resource Area.
- 36. Construction entrances shall be used and maintained only where noted on approved plans.
- 37. Arrangements shall be made for any rinsing of tools, equipment, etc. associated with on–site mixing or use of concrete or other materials such that the waste water is disposed of in the concrete wash out station-at least 50 feet from the resource area. In no case may waste water be discharged into or onto Resource Areas on or adjacent to the site. In no case may waste water be placed in stormdrains. Any spillage of materials shall be cleaned up promptly.

#### Sweeping

38. Any dirt or debris spilled or tracked onto any paved streets shall be swept up and removed daily.

### **Dewatering**

- 39. Any dewatering operations shall conform to the following:
  - (a) Notify the Conservation Commission that dewatering is required.
  - (b) Any catch basins, drain and outfalls to be used in dewatering operations shall be cleaned out before operations begin.
  - (c) Any water discharged as part of any dewatering operation shall be passed through filters, on-site settling basins, settling tank trucks, or other devices to ensure that no observable sediments or pollutants are carried into any Resource Area, street, drain or adjacent property.
  - (d) Measures shall be taken to ensure that no erosion or scouring shall occur on public or private property, or on the banks or bottoms of water bodies, as a result of dewatering operations.

Dewatering shall occur only where noted on approved plans.

### **Plantings**

40. Prior to plant installation, the Applicant shall submit planting plan details to the Conservation Commission for approval. Planting details shall include plant sizes, Latin names, regular

**APPROVAL ORDER OF CONDITIONS** 

ARLINGTON RESERVOIR BEACH IMPROVEMENTS

DEP FILE NO. 091-0304

names, number of plants, and transported method (containerized, balled-and-burlapped, etc.). All plantings shall be native and be installed and maintained according to the standards of the American Association of Nurserymen (AAN). This shall be a continuing condition that survives the expiration of the permit and shall be included in any Certificate of Compliance as a continuing condition.

41. The Applicant shall protect all area trees per the Town Wetlands Protection Regulations, Section 24 Vegetation Removal and Replacement, protecting trees through securing (not nailing) 2x4 boards, between 6-8 feet in length, around tree base. The boards shall be installed vertically such that one end is installed directly into the ground.

#### Chemicals

42. To avoid adding excess nitrogen runoff, the Applicant shall only treat the lawn with slow release nitrogen fertilizer. Application of this fertilizer cannot occur in the summer, or after storm events. Lawn fertilizer shall only be applied twice a year, in spring and fall. No herbicides shall be used to treat invasive or unwanted plants. New plantings shall only be fertilized once, during the initial planting year. No pesticides or rodenticides shall be used to treat pest management issues. This shall be a continuing condition that survives the expiration of the permit and shall be included in any Certificate of Compliance as a continuing condition.

### **Pervious Surfaces**

43. Pervious surfaces shown on the project plans shall be maintained and not be replaced by impervious surfaces. This shall be a continuing condition that survives the expiration of the permit and shall be included in any Certificate of Compliance as a continuing condition.

### **Stormwater**

- 44. The Applicant shall protect all adjacent catch basins using silt socks.
- 45. The Applicant shall conduct catch basin sump cleanings at the end of the project work period.